Teramind On-Premise

Deployment Guide

Ver 5.3 (11 APR 2024)

TERAMIND

Quick Start & Deployment Overview

There are 4 key steps to deploying Teramind On-Premise. Steps 2 to 4 are identical no matter which virtualization platform you choose. Click a link to jump to its instructions section:

1	**Setting Up a Virtual Machine (VM)**	This is done on your VMware / Hyper-V / Nutanix environment - either through their client or web interface. Separate instructions are provided for each platform: • VMware ESXi 6.7 • VMware vSphere • Hyper-V • Nutanix AHV - OVA Method • Nutanix AHV - Unpacked OVA Method
2	**Setting Up the IP, Network and Machine Role(s)**	The instructions are similar for all environments. This is done on a Console interface on the VM. • Setting Up the IP, Network and Machine Role(s)
3	**Setting Up the Account and Finish the Deployment**	This is done from the Teramind Dashboard. • Setting Up the Account and Finishing Deployment
4	**Installing the Teramind Agent**	The Agent can be downloaded from the Teramind Dashboard. • Installing the Teramind Agent

Table of Contents

Teramind On-Premise Overview

Teramind is the world's leading platform for employee monitoring, insider threat detection, data loss prevention and workforce productivity optimization solutions. All Teramind solutions can be deployed On-Premise. This deployment guide will help you discover what you can expect from your Teramind On-Premise deployment and provide you with installation prerequisites, step-by-step instructions, technical, and support information.

Benefits of Deploying Teramind On-Premise

Here are some benefits you can expect if you choose to deploy Teramind On-Premise:

Full Control of Your Environment

Use your own infrastructure and only pay for resources you consume (i.e. CPU, storage, memory). Full control of your environment means you can achieve the SLA you need.

Flexible Storage

Choose how much storage you want to be allocated for OCR, user data, and application metadata. The nodes will communicate with the master nodes and each other automatically making storage management easier.

Flexible Deployment Options

Deploy the entire Teramind server with a single OVA/VHD. Support for VMware ESXi, Hyper-V and Nutanix gives you the freedom to deploy Teramind on many environments.

Control Your Own Backup

Control how often and when backups are taken. Teramind On-Premise supports both on-demand and scheduled backups.

Easy Updates

Single file model for security, patch management, and feature deployment. One-click deployment from the dashboard makes it easy to keep your server running smoothly.

Integration

Export data to SIEM, IDS/IPS, and other threat analytics systems via syslog. Active Directory integration and REST-based API open up the possibility for coordinated security orchestration.

Security and Compliance

You control all aspects of security and compliance including firewall, SSL, VLAN, SSH tunnels, 2FA, IP whitelisting on your firewall, etc. Your security measures, combined with Teramind's built-in support for HIPAA, GDPR, PCI DSS, and other compliance-specific policy and rules, makes Teramind On-Premise ideal for customers in government, healthcare, finance, and other regulated industries.

Deployment Videos

You can watch the deployment videos on the Teramind YouTube channel using the following links:

- VMware ESXi 6.7 Deployment
- Hyper-V Deployment
- Nutanix AHV Deployment (OVA Method)

Primary Server Requirements

Deployments for under 1,000 concurrent users can be hosted on one all-inclusive server, in most cases. CPU and system memory should be provisioned based on the expected number of concurrent monitored sessions, according to the following table:

Concurrent Users*	Server Requirements	CPU/RAM Requirements
Up to 100	1 Teramind Master Server (VM)	• CPU: 4 cores • RAM: 8 GB
Up to 500	1 Teramind Master Server (VM)	• CPU: 8 cores • RAM: 16 GB
Up to 1, 000	1 Teramind Master Server (VM)	• CPU: 16 cores • RAM: 24 GB
1001 to 10,000	1 Teramind Master Server (VM)	• CPU: 16 cores • RAM: 32 GB
	1 Teramind App Server (VM) per 1,000 concurrent users	• CPU: 16 cores • RAM: 24 GB
	1 Teramind BI Server (VM)	• CPU: 16 cores • RAM: 32 GB

For deployments over 10,000 concurrent users, please contact Teramind.

**The requirements are applicable for a typical user who works on a single computer with Full HD (1920x1080) screen resolution, doing regular office work. If the users have multiple screens, higher-resolution screens, or have an unusual work pattern (e.g., watching many videos) then the requirements will be higher.*

OCR Server Requirements

OCR (Optical Character Recognition) allows you to detect text inside images or videos. You will need to set up OCR nodes for OCR features such as OCR Search and OCR Rules to work.

You need to set up at least one OCR Database Node and one Mining Node for the OCR features to work.

No of Users*	Server Requirements	CPU/RAM Requirements

Less than 200 users	1 OCR Database Node	• CPU: 4 cores • RAM: 8 GB • Disk: 100 GB
	1 OCR Mining Node	• CPU: 16 cores • RAM: 16 GB • Disk: 50 GB or more

Larger deployments of 200 or more users	1 OCR Database Node	• CPU: 4 cores • RAM: 8 GB • Disk: 100 GB
	1 OCR Mining Node per 200 users	• CPU: 16 cores • RAM: 16 GB • Disk: 50 GB or more

**The requirements are applicable for a typical user who works on a single computer with Full HD (1920x1080) screen resolution, doing regular office work. If the users have multiple screens, higher-resolution screens, or have an unusual work pattern (e.g., watching many videos) then the requirements will be higher.*

You will need to adjust the disk size as you add or remove video recordings over time. See the Storage Requirements section below for more information.

Storage Requirements

Primary Storage	The Teramind virtual appliance comes with a primary volume of 100 GB. This volume contains the Teramind server application and database. The size of this volume can be increased at a later point in time. **Teramind requires the primary volume to be on SSD or equivalently fast storage for deployments above 500 users.** **BI Classifications server needs about 5GB of disk space plus additional disk space equivalent to about 20% of your current DB size. So for example, if you have a database of 100GB the BI deployment will need 20GB+5GB = 25GB space. Check out this KB article to learn how to update your BI classifications.**
Storage for Screen Recordings	The simplest way to add storage is from your hypervisor, by simply adding a second volume. If you use Hyper-V, this volume should be a VHDX file (not VHD). Once adding a second volume, additional steps outlined in this article can be followed to finish provisioning a recording volume. You can also use a NAS or any filesystem over NFS. You can check this article on our Knowledge Base for help.

	A NAS over NFS is mandatory if you have a multi-server deployment (a deployment that has more than one Teramind App Server). For help with setting up a NAS check out this article on our Knowledge Base. The size of this second volume can be estimated based on the number of sessions that will be recorded. Teramind uses approximately 1.5 GB per 160 hours of screen recording. This can vary due to multiple factors such as the number of screens, resolution, framerate, color mode, whether audio recording is enabled or not, user's activity level, etc. You can adjust retention policies and recording preferences in the monitoring settings to reduce the storage requirement. This storage is low-access and can be on magnetic / non-SSD media. To learn how to attach, mount and expand recording volumes please check out this article on our Knowledge Base.

Agent Requirements

Supported Platforms	• Microsoft Windows 8 and up (64-bit) • Microsoft Windows Server 2012 and up • macOS 14 (Sonoma), macOS 13 (Sonoma), macOS 13 (Ventura), macOS 12 (Monterey), macOS 11 (Big Sur), macOS 10.15 (Catalina) and macOS 10.14 (Mojave) * ** At the moment, Teramind on Mac has limited functionalities. Check out what features are currently supported here.*
Sessions	• Stand-alone workstation / server • Terminal server (RDS) * • Application / Session server • Citrix • VMware Horizon ** Ideally, terminal servers should have a maximum of about 30 users or less depending on the number of screens and monitoring settings. Otherwise, you may have a performance impact.*
Load	Approximately 30 MB - 50 MB memory and 1-3% CPU utilization, depending on user activity.
Visibility	Hidden or revealed desktop agents available.
Deployment	• Silent MSI • Deployment via Group Policy or SCCM

	- Dashboard-based silent remote installer
Bandwidth	Approximately 10 KB/s - 20 KB/s upstream depending on user activity level & number of screens. You can configure how much bandwidth is used and when from the settings.
Offline Storage	Teramind features offline recording on the Silent/Hidden Agent. This means that in case of network downtime, the agent will save all data locally, and continue to enforce policy. Once the connection is re-established, the agent will upload the data to the server at a throttled pace. The offline storage buffer is configurable in monitoring settings.

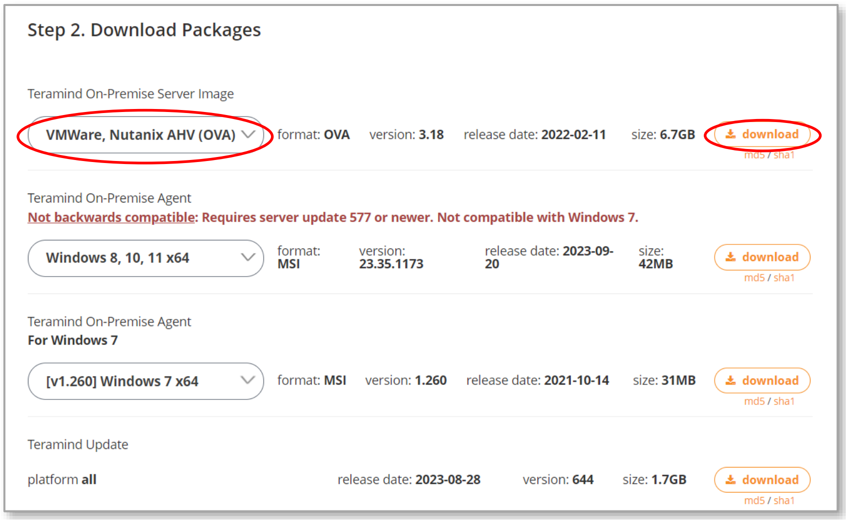
Detailed agent specifications can be found on our Knowledge Base here.

Pre-Requisites

Teramind Server Image: (OVA/VHD)	Available for download on the Self-Hosted Portal at: www.teramind.co/portal.
Teramind License Key	
Teramind Agent Installer – EXE / MSI / DMG file (Mac)	The Agent installer can be downloaded from the Teramind Dashboard or from the Self-Hosted Portal and deployed remotely.
Available IP Address	Supplied by you.
Virtualization Environment	Supplied by you. Teramind supports the following virtualization platforms in production: • VMware ESXi 6 and later • Hyper-V • Nutanix AHV

Note:
The following deployment instructions are for a single-node setup (deployment without any App Server). Please check out this article on our Knowledge Base for help on multi-node deployments.

1 Setting Up a Virtual Server with VMware ESXi 6.7 Web Interface



Step 2. Download Packages

Teramind On-Premise Server Image

VMWare, Nutanix AHV (OVA) format: OVA version: 3.18 release date: 2022-02-11 size: 6.7GB download md5 / sha1

Teramind On-Premise Agent

Not backwards compatible: Requires server update 577 or newer. Not compatible with Windows 7.

Windows 8, 10, 11 x64 format: MSI version: 23.35.1173 release date: 2023-09-20 size: 42MB download md5 / sha1

Teramind On-Premise Agent
For Windows 7

[v1.260] Windows 7 x64 format: MSI version: 1.260 release date: 2021-10-14 size: 31MB download md5 / sha1

Teramind Update

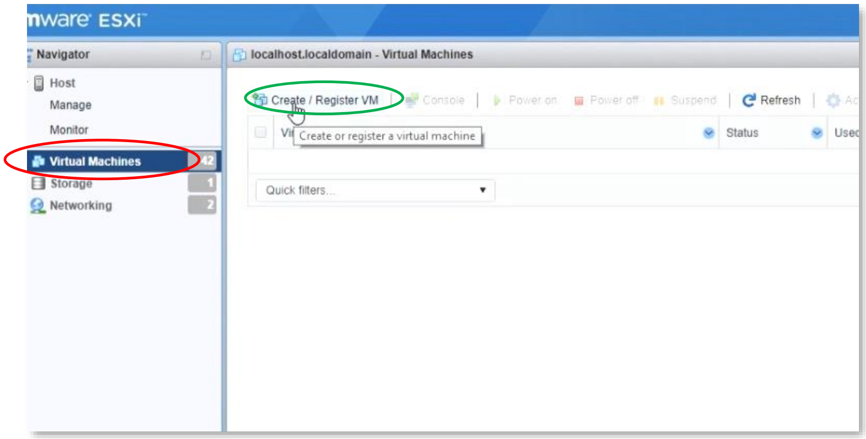
platform all release date: 2023-08-28 version: 644 size: 1.7GB download md5 / sha1

Step 1-1

Go to the **Download** section of the Teramind Self-Hosted Portal.

Scroll down to the *Step 2: Download Packages* section.

Select **VMWare, Nutanix AHV (OVA)** from the *Teramind On-Premise Server Image* drop-down list and click the **download** button to download the OVA file. You will need this file in Step 1-4.

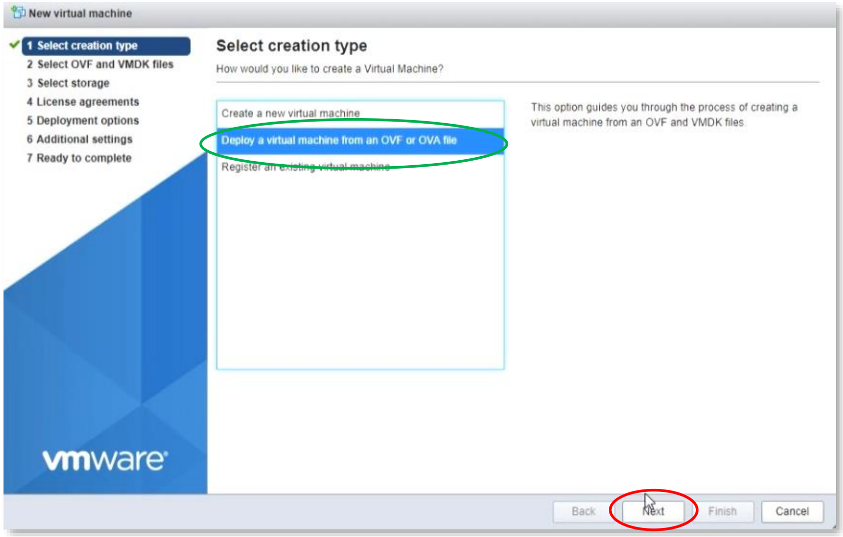


Step 1-2

From the VMware main interface, under the Navigation tab on the left, select **Virtual Machines**.

From the right side of the screen, click the **Create / Register VM** button.

Step 1-3



Select creation type

How would you like to create a Virtual Machine?

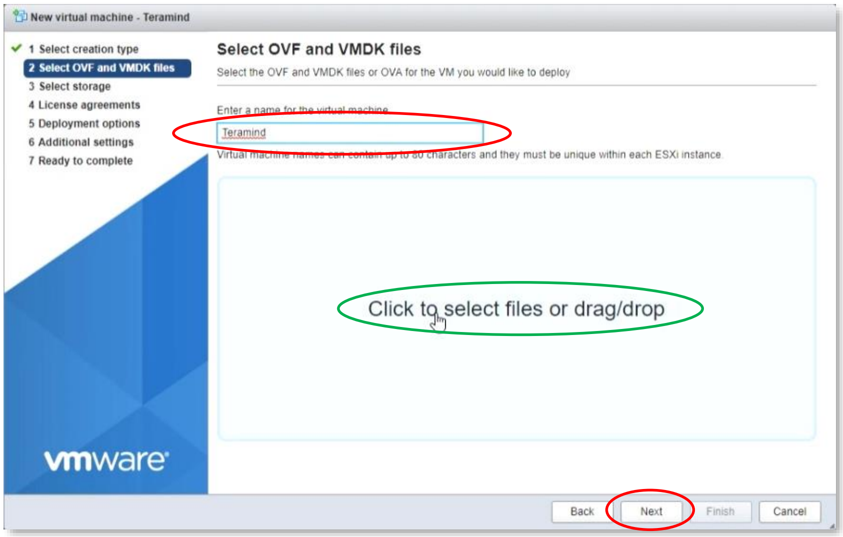
This option guides you through the process of creating a virtual machine from an OVF and VMDK files

A window will pop up where you can specify settings for the new virtual machine you are about to create.

For the first screen, *Select creation type*, select **Deploy a virtual machine from an OVF or OVA file** option.

Click the **Next** button to continue.

Step 1-4



Select OVF and VMDK files

Select the OVF and VMDK files or OVA for the VM you would like to deploy

Enter a name for the virtual machine

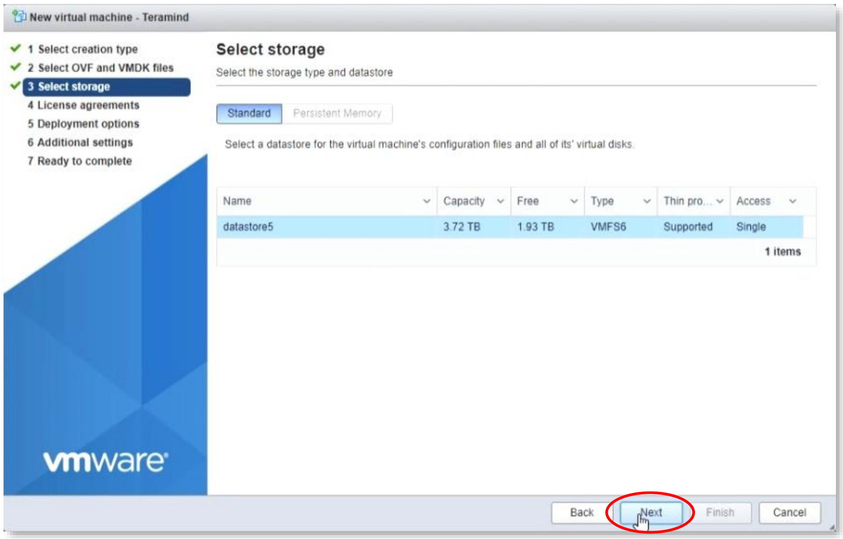
Teramind

Virtual machine names can contain up to 80 characters and they must be unique within each ESXi instance.

Here, enter a name for your virtual machine. For example, ‘**Teramind**’.

Then click the area that says, **Click to select files or drag/drop** to upload the Teramind Server OVA file you downloaded in Step 1-1.

Click the **Next** button to continue.



New virtual machine - Teramind

- ✓ 1 Select creation type
- ✓ 2 Select OVF and VMDK files
- ✓ 3 Select storage
- 4 License agreements
- 5 Deployment options
- 6 Additional settings
- 7 Ready to complete

Select storage

Select the storage type and datastore

Standard | Persistent Memory

Select a datastore for the virtual machine's configuration files and all of its' virtual disks.

Name	Capacity	Free	Type	Thin pro...	Access
datastore5	3.72 TB	1.93 TB	VMFS6	Supported	Single

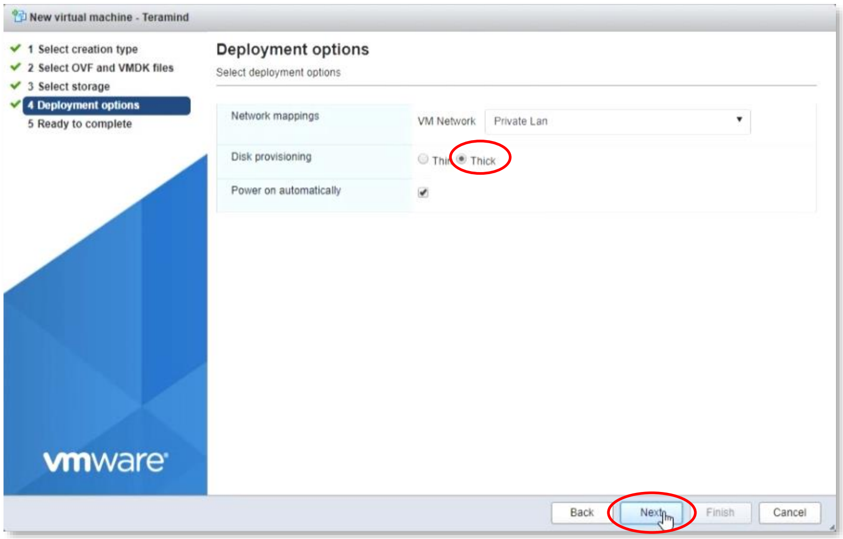
1 items

Step 1-5

For now, you can keep the default settings as-is for the *Select storage* screen.

We will add a second hard disk later for the screen recordings (Step 1-13).

Click the **Next** button to continue.



New virtual machine - Teramind

- ✓ 1 Select creation type
- ✓ 2 Select OVF and VMDK files
- ✓ 3 Select storage
- ✓ 4 Deployment options
- 5 Ready to complete

Deployment options

Select deployment options

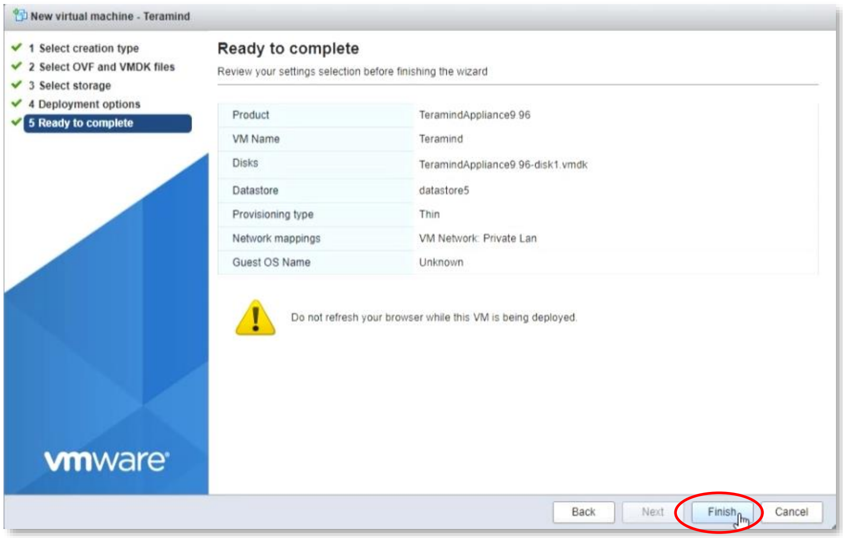
Network mappings	VM Network: Private Lan ▾
Disk provisioning	○ Thi ● Thick
Power on automatically	☑

Step 1-6

Select **Thick** for the *Disk provisioning* option.

You can keep the default settings as-is for the rest of the options.

Click the **Next** button to continue.



Ready to complete

Review your settings selection before finishing the wizard

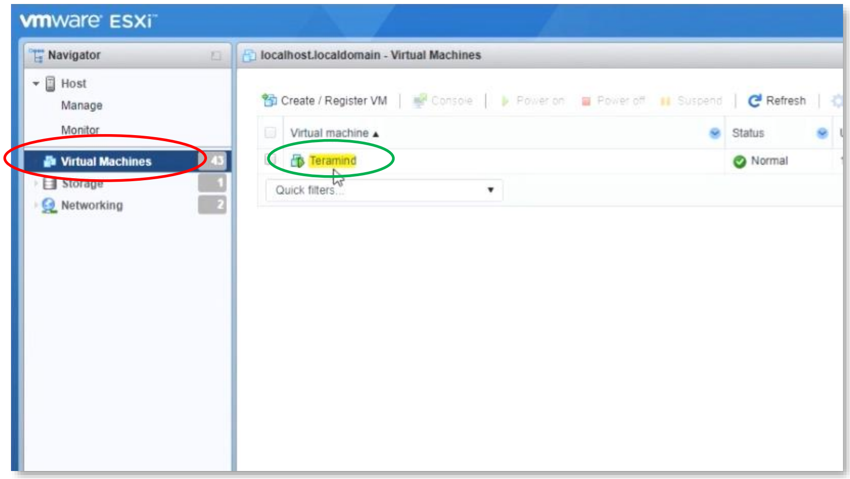
Product	TeramindAppliance9.96
VM Name	Teramind
Disks	TeramindAppliance9.96-disk1.vmdk
Datastore	datastore5
Provisioning type	Thin
Network mappings	VM Network: Private Lan
Guest OS Name	Unknown

Do not refresh your browser while this VM is being deployed.

Step 1-7

On the *Ready to complete* screen, you can see a summary of your VM's settings. Click the **Finish** button to start the VM deployment process.

Do not refresh your browser while the VM is being deployed.

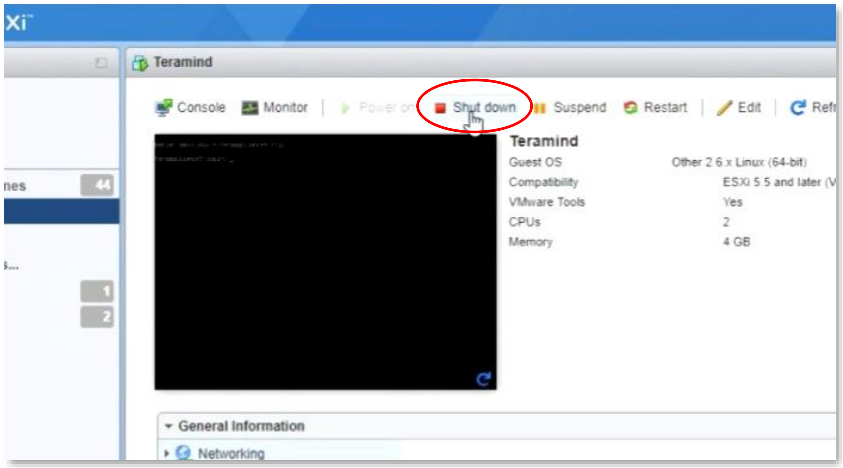


Step 1-8

Once the deployment is finished, you can see your newly created VM 'Teramind' on the main ESXi interface under the **Virtual Machines** tab.

We will now add a second volume to hold the screen recordings.

Click the VM **Teramind** to access its settings.



Teramind

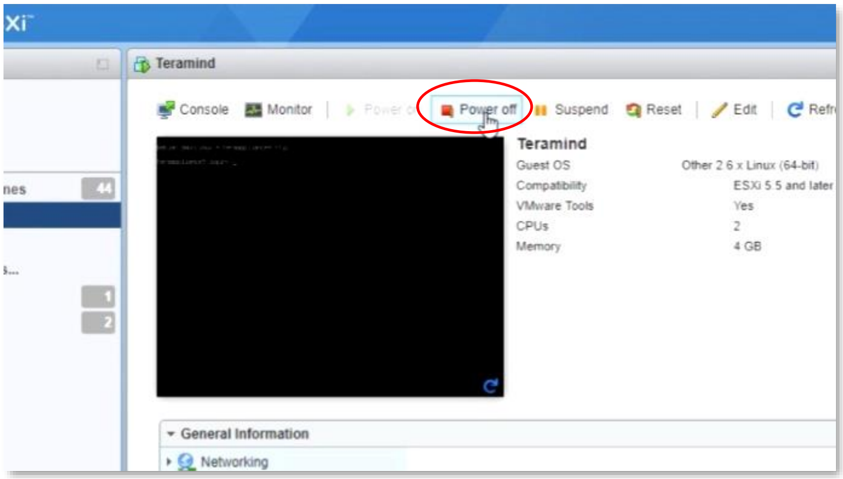
Guest OS	Other 2.6.x Linux (64-bit)
Compatibility	ESXi 5.5 and later (V
VMware Tools	Yes
CPUs	2
Memory	4 GB

Step 1-9

If the VM is running, click the **Shut down** button to shut it down first.

Wait until the VM is shut down.

If the VM is already shut down, you can skip this step.



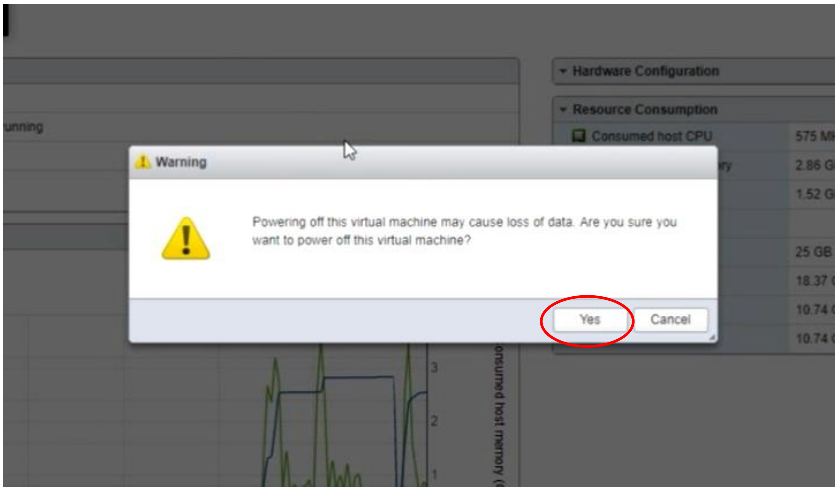
Teramind

Guest OS	Other 2.6 x Linux (64-bit)
Compatibility	ESXi 5.5 and later
VMware Tools	Yes
CPUs	2
Memory	4 GB

Step 1-10

Click the **Power off** button to power off the VM.

If the VM is already powered down, you can skip this step.



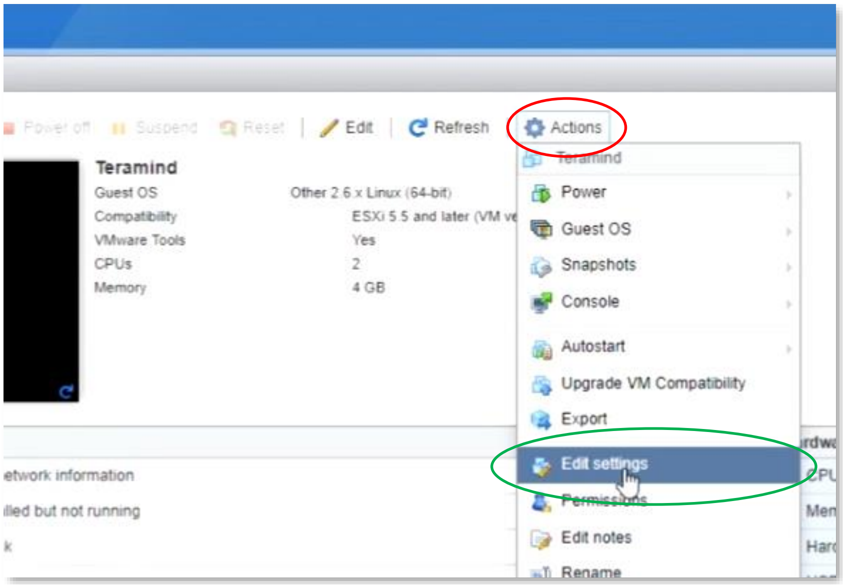
Powering off this virtual machine may cause loss of data. Are you sure you want to power off this virtual machine?

Step 1-11

You might see a warning message saying powering off the VM may cause data loss. Since our VM is brand new, we don’t have to worry about that.

Click **Yes** to continue.

Wait until the VM is powered off.



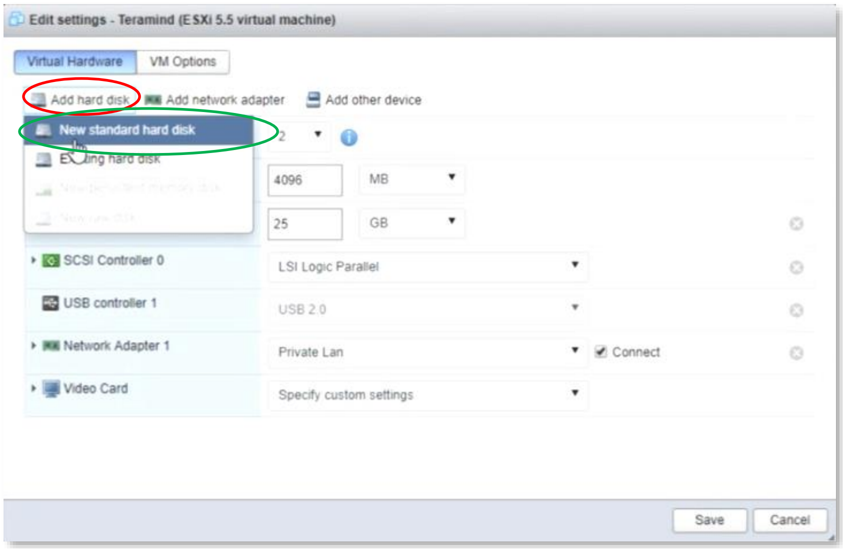
Teramind

Guest OS	Other 2.6 x Linux (64-bit)
Compatibility	ESXi 5.5 and later (VM ve
VMware Tools	Yes
CPUs	2
Memory	4 GB

Step 1-12

Click the **Actions** button on the top-right corner. Select **Edit settings** from the pop-up menu.

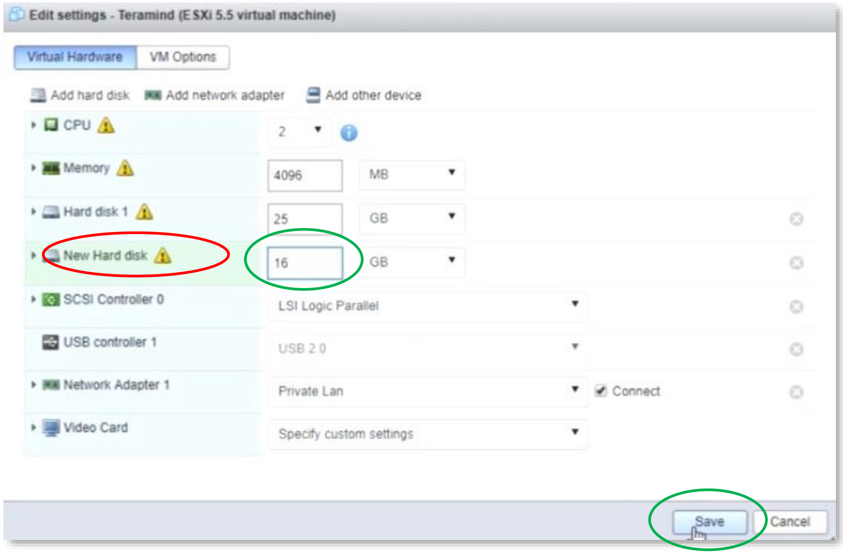
A new window will pop up where you can configure and add/remove hardware for your VM.



2
4096 MB
25 GB
SCSI Controller 0: LSI Logic Parallel
USB controller 1: USB 2.0
Network Adapter 1: Private Lan ☑ Connect
Video Card: Specify custom settings

Step 1-13

Under the *Virtual Hardware* tab, click the **Add hard disk** button then select **New standard hard disk**.



CPU: 2
Memory: 4096 MB
Hard disk 1: 25 GB
New Hard disk: 16 GB
SCSI Controller 0: LSI Logic Parallel
USB controller 1: USB 2.0
Network Adapter 1: Private Lan ☑ Connect
Video Card: Specify custom settings

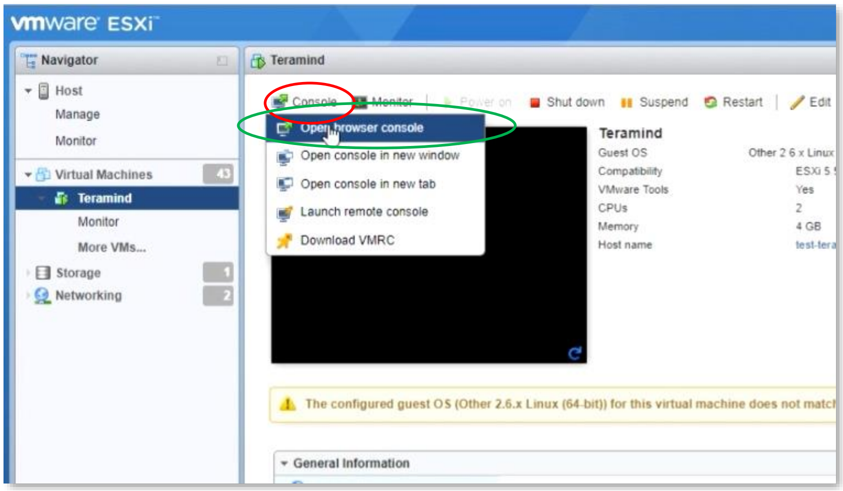
Step 1-14

You will see the new hard disk appear on the list of hardware on the left side of the window.

Click the **New Hard disk**. You can adjust its **size** on the right. You can start with a small size (i.e. 16 GB) and then increase as needed.

Click the **Save** button.

Please check the Storage for Screen Recordings section under the Storage Requirements section for more information on storage requirements.



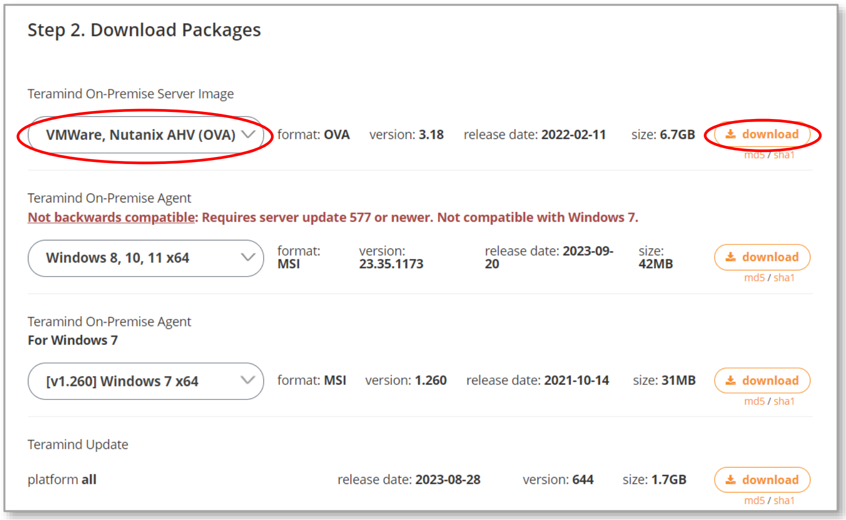
Step 1-15

Back on the main interface, click the **Console** button on top and select **Open browser console**.

Once the console window opens, you will be able to set up the IP, network and assign machine role(s).

Proceed to ***Step 2: Setting Up the IP, Network and Machine Role(s)*** to continue.

1 Setting Up a Virtual Server with VMware vSphere Client



Step 2. Download Packages

Teramind On-Premise Server Image

VMWare, Nutanix AHV (OVA) | format: OVA | version: 3.18 | release date: 2022-02-11 | size: 6.7GB | download md5 / sha1

Teramind On-Premise Agent
Not backwards compatible: Requires server update 577 or newer. Not compatible with Windows 7.

Windows 8, 10, 11 x64 | format: MSI | version: 23.35.1173 | release date: 2023-09-20 | size: 42MB | download md5 / sha1

Teramind On-Premise Agent
For Windows 7

[v1.260] Windows 7 x64 | format: MSI | version: 1.260 | release date: 2021-10-14 | size: 31MB | download md5 / sha1

Teramind Update

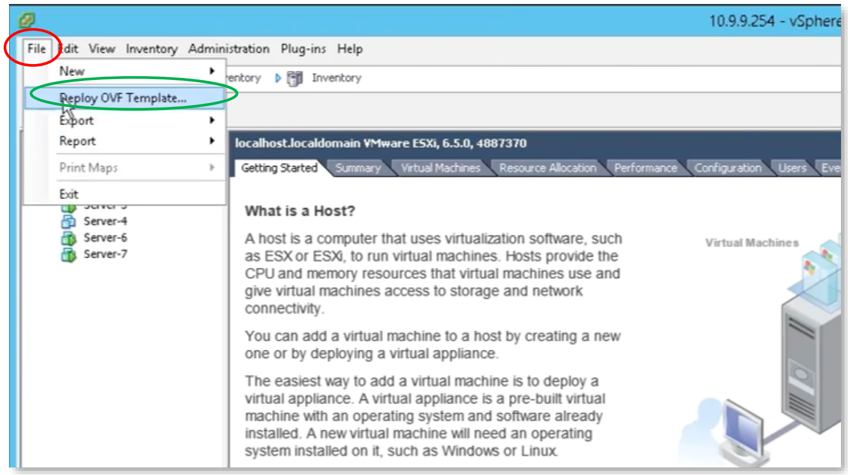
platform all | release date: 2023-08-28 | version: 644 | size: 1.7GB | download md5 / sha1

Step 1-1

Go to the **Download** section of the Teramind Self-Hosted Portal.

Scroll down to the *Step 2: Download Packages* section.

Select **VMWare, Nutanix AHV (OVA)** from the *Teramind On-Premise Server Image* drop-down list and click the **download** button to download the OVA file. You will need this file in Step 1-2.



What is a Host?

A host is a computer that uses virtualization software, such as ESX or ESXi, to run virtual machines. Hosts provide the CPU and memory resources that virtual machines use and give virtual machines access to storage and network connectivity.

You can add a virtual machine to a host by creating a new one or by deploying a virtual appliance.

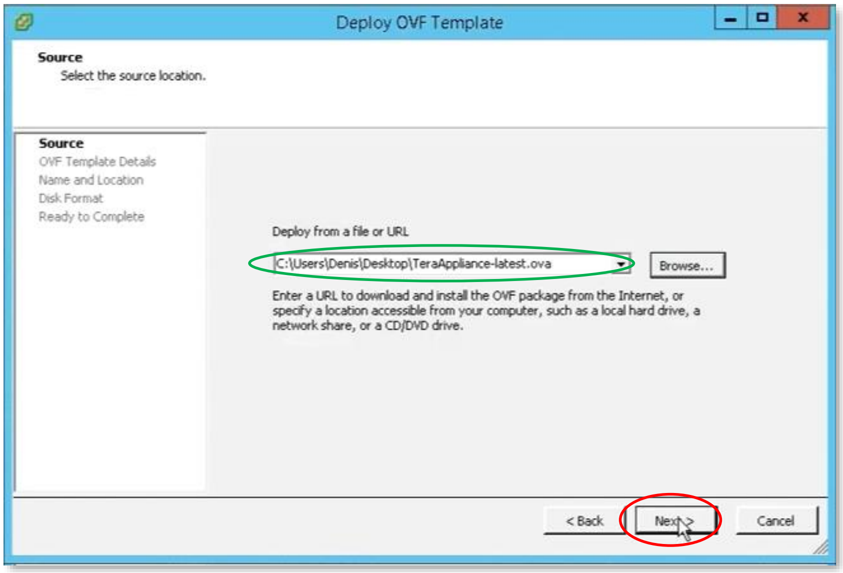
The easiest way to add a virtual machine is to deploy a virtual appliance. A virtual appliance is a pre-built virtual machine with an operating system and software already installed. A new virtual machine will need an operating system installed on it, such as Windows or Linux.

Step 1-2

From the vSphere client interface, click the **File** menu and select **Deploy OVF Template**…

When prompted, select the Teramind Server OVA file you downloaded in Step 1-1.

The *Deploy OVF Template* window will pop up.



Source

Select the source location.

Deploy from a file or URL

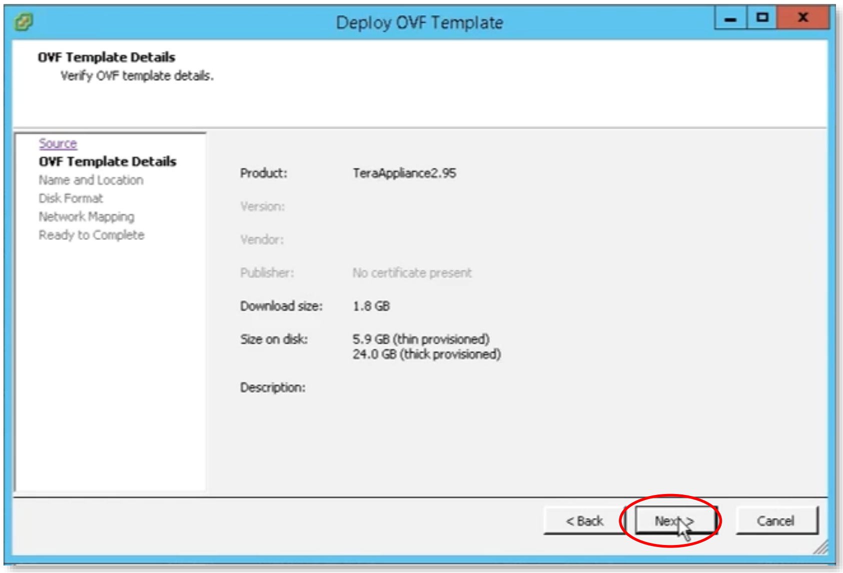
C:\Users\Denis\Desktop\TeraAppliance-latest.ova

Enter a URL to download and install the OVF package from the Internet, or specify a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.

Step 1-3

The first screen on the *Deploy OVF Template* window is called *Source*. On this screen, the **Deploy from a file or URL** box should already be populated by the OVA file path you selected in Step 1-2. If not, you can click the **Browse…** button to load the file again.

Click the **Next** button to continue.



OVF Template Details

Verify OVF template details.

Product: TeraAppliance2.95

Version:

Vendor:

Publisher: No certificate present

Download size: 1.8 GB

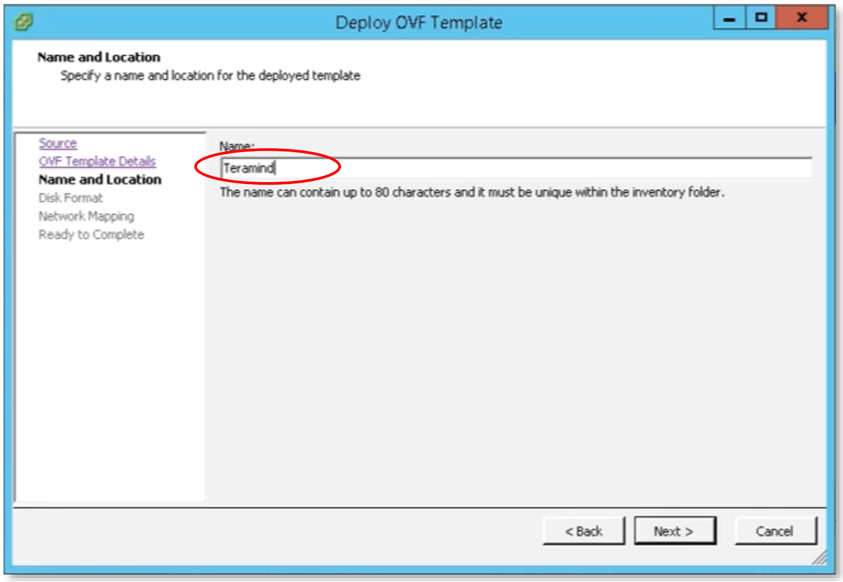
Size on disk: 5.9 GB (thin provisioned)
24.0 GB (thick provisioned)

Description:

Step 1-4

We can keep the default settings as-is for the *OVF Template Details* screen.

Click the **Next** button to continue.



Deploy OVF Template

Name and Location

Specify a name and location for the deployed template

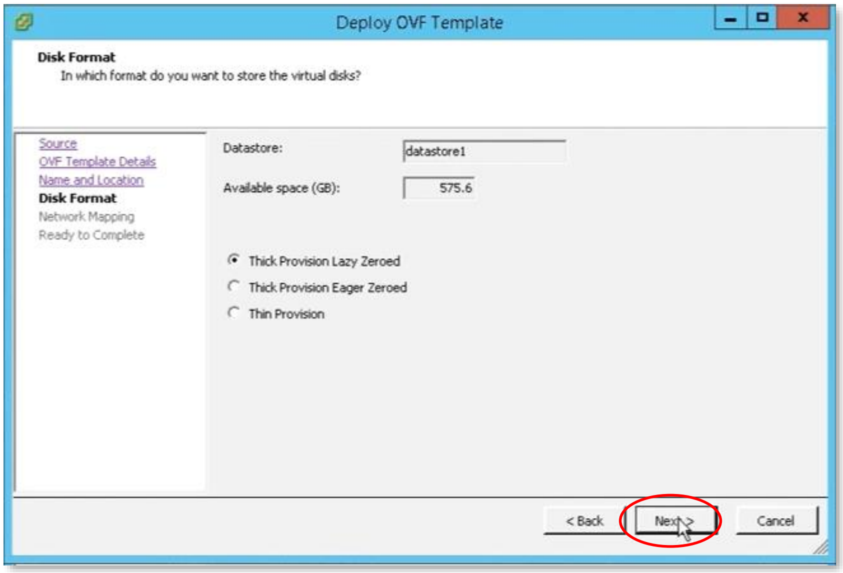
Name: Teramind

The name can contain up to 80 characters and it must be unique within the inventory folder.

Step 1-5

On the *Name and Location* screen, enter a name for your virtual machine. For example, **Teramind**.

Click the **Next** button to continue.



Deploy OVF Template

Disk Format

In which format do you want to store the virtual disks?

Datastore: datastore1

Available space (GB): 575.6

● Thick Provision Lazy Zeroed

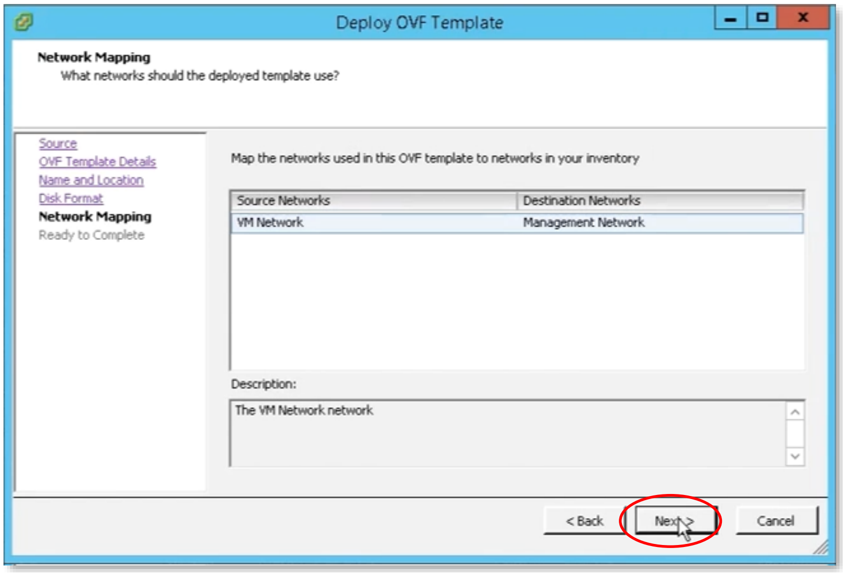
○ Thick Provision Eager Zeroed

○ Thin Provision

Step 1-6

We can keep the default settings as-is for the *Disk Format* screen.

Click the **Next** button to continue.



Map the networks used in this OVF template to networks in your inventory

Source Networks	Destination Networks
VM Network	Management Network

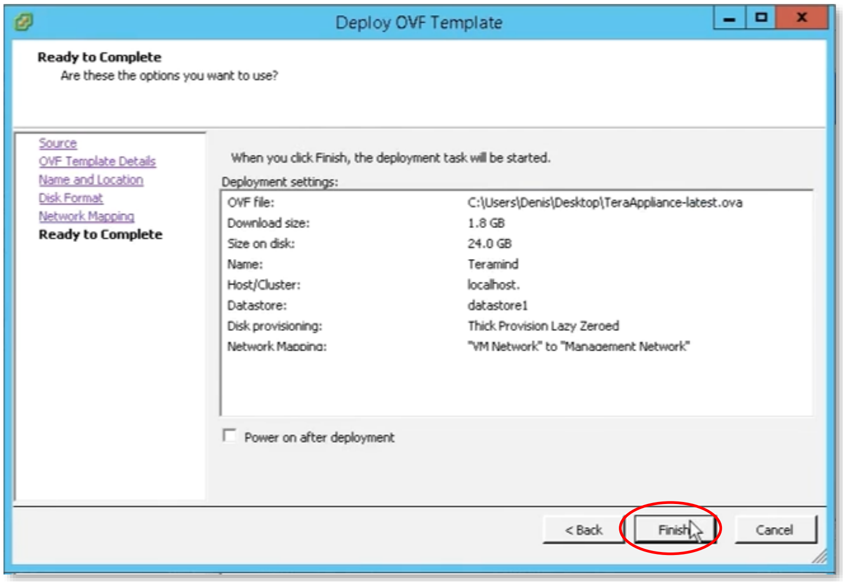
Description:

The VM Network network

Step 1-7

We can keep the default settings as-is for the *Network Mapping* screen.

Click the **Next** button to continue.



When you click Finish, the deployment task will be started.

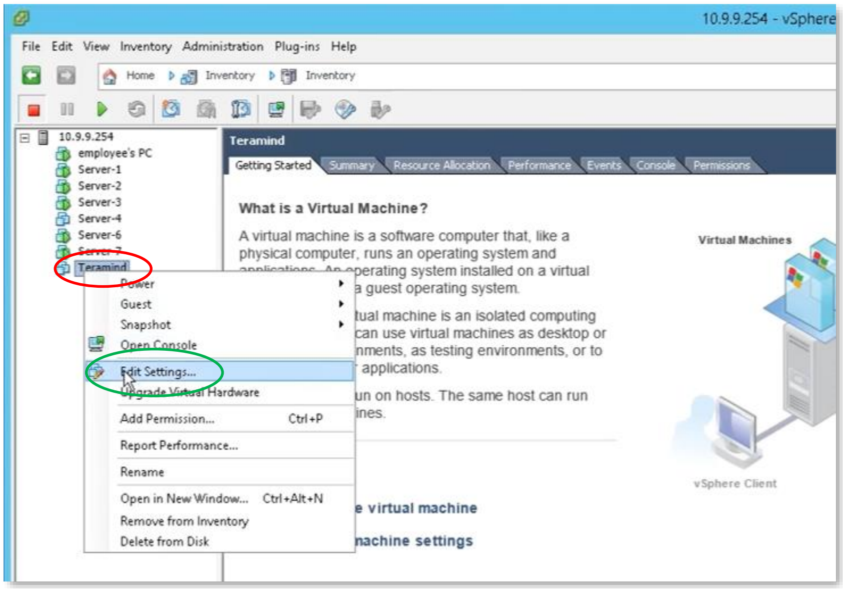
Deployment settings:

OVF file:	C:\Users\Denis\Desktop\TeraAppliance-latest.ova
Download size:	1.8 GB
Size on disk:	24.0 GB
Name:	Teramind
Host/Cluster:	localhost.
Datastore:	datastore1
Disk provisioning:	Thick Provision Lazy Zeroed
Network Mapping:	"VM Network" to "Management Network"

☐ Power on after deployment

Step 1-8

On the *Ready to Complete* screen, you can see a summary of your VM's settings. Click the **Finish** button to start the VM deployment process.



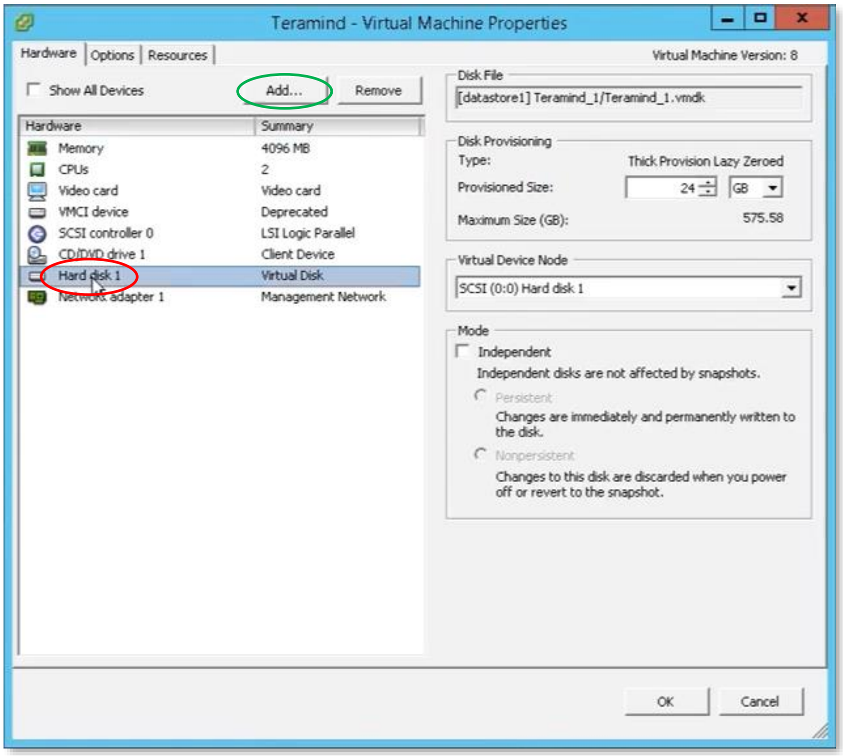
Step 1-9

Once the deployment is finished, you can see your newly created VM, **Teramind** on the main vSphere interface, on the list of servers.

We will now add a second volume to hold the screen recordings.

Right-click the Teramind server and select **Edit Settings…** from the pop-up menu.

The *Virtual Machine Properties* window will open.


Teramind - Virtual Machine Properties
Hardware Options Resources
Virtual Machine Version: 8
Show All Devices
Add...
Remove
OK
Cancel

Hardware	Summary
Memory	4096 MB
CPUs	2
Video card	Video card
VMCI device	Deprecated
SCSI controller 0	LSI Logic Parallel
CD/DVD drive 1	Client Device
Hard disk 1	Virtual Disk
Network adapter 1	Management Network

Disk File: [datastore1] Teramind_1/Teramind_1.vmdk

Disk Provisioning
Type: Thick Provision Lazy Zeroed
Provisioned Size: 24 GB
Maximum Size (GB): 575.58

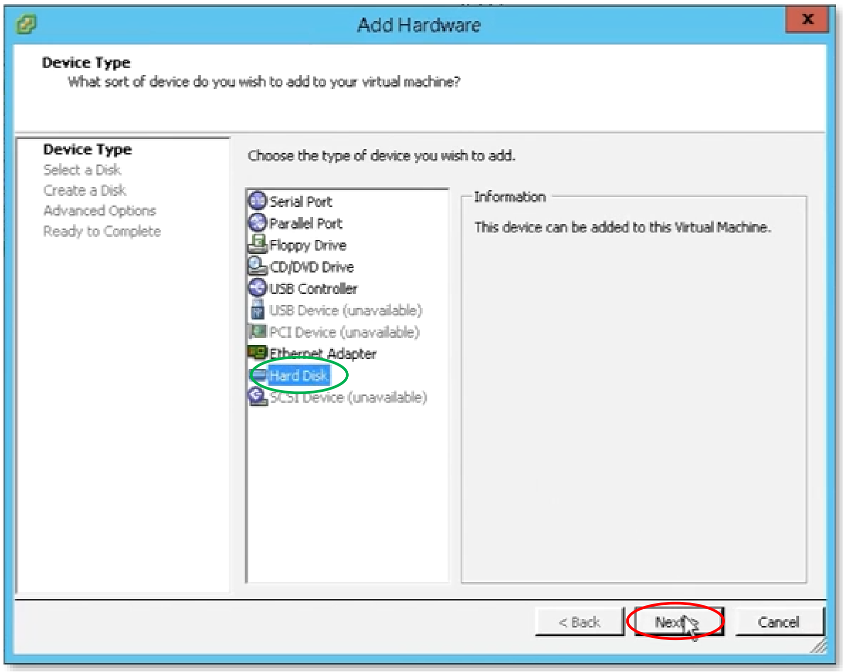
Virtual Device Node: SCSI (0:0) Hard disk 1

Mode
□ Independent
Independent disks are not affected by snapshots.
○ Persistent
Changes are immediately and permanently written to the disk.
○ Nonpersistent
Changes to this disk are discarded when you power off or revert to the snapshot.

Step 1-10

On the *Virtual Machine Properties* window, click under the *Hardware* tab and you will see a list of existing hardware. Select **Hard disk 1**, then click the **Add…** button on top.

The *Add Hardware* window will open.



Device Type

What sort of device do you wish to add to your virtual machine?

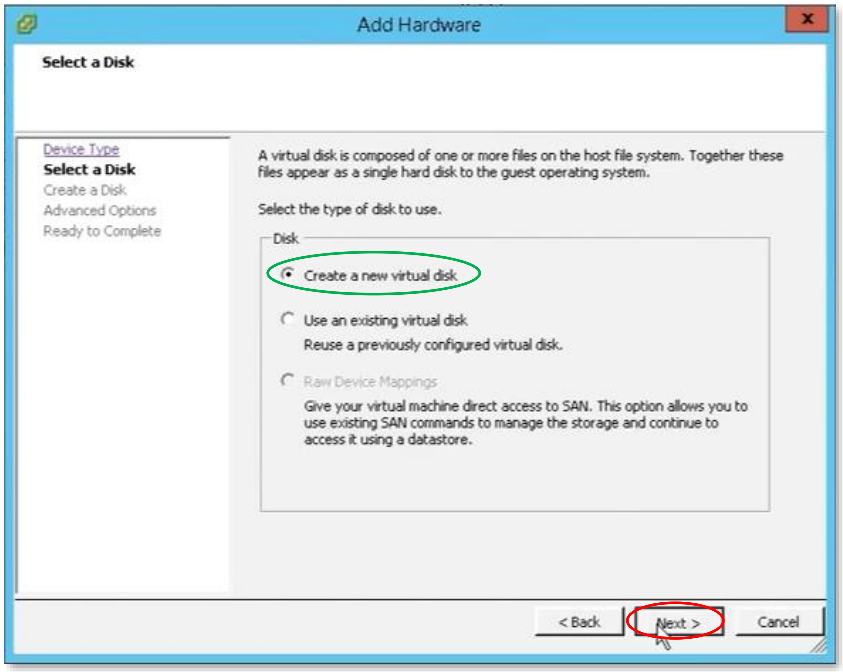
Choose the type of device you wish to add.

This device can be added to this Virtual Machine.

Step 1-11

On the first screen, *Device Type* of the *Add Hardware* window, select **Hard Disk**.

Click the **Next** button to continue.



Select a Disk

A virtual disk is composed of one or more files on the host file system. Together these files appear as a single hard disk to the guest operating system.

Select the type of disk to use.

● Create a new virtual disk

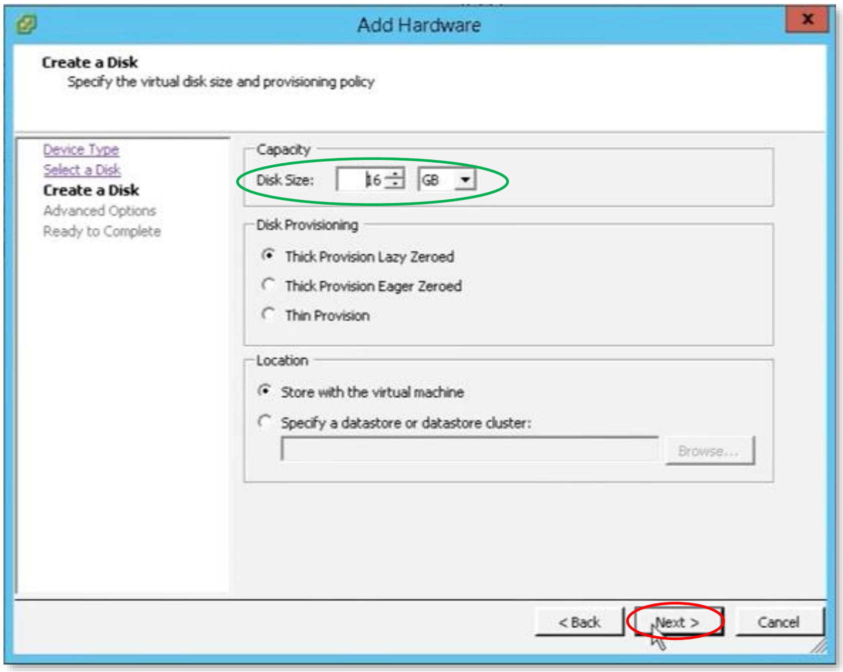
○ Use an existing virtual disk
Reuse a previously configured virtual disk.

○ Raw Device Mappings
Give your virtual machine direct access to SAN. This option allows you to use existing SAN commands to manage the storage and continue to access it using a datastore.

Step 1-12

On the *Select a Disk* screen, make sure the **Create a new virtual disk** option is selected.

Click the **Next** button to continue.



Add Hardware

Create a Disk

Specify the virtual disk size and provisioning policy

Capacity

Disk Size: 16 GB

Disk Provisioning

● Thick Provision Lazy Zeroed

○ Thick Provision Eager Zeroed

○ Thin Provision

Location

● Store with the virtual machine

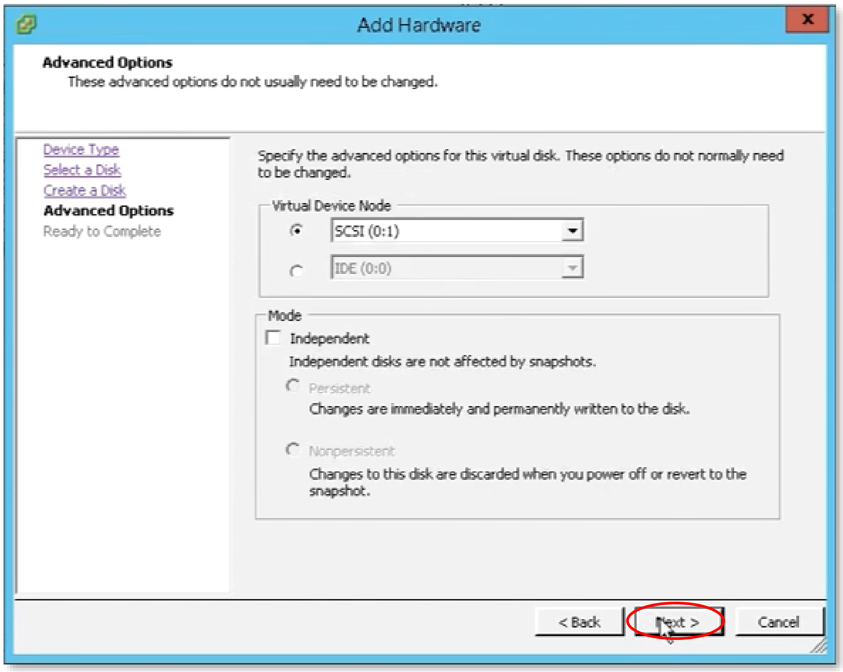
○ Specify a datastore or datastore cluster:

Step 1-13

On the *Create a Disk* screen, you can adjust the disk parameters or keep them as-is. For the **Disk Size** parameter, you can start with a small allocation (for example 16 GB) and then increase as needed.

Please check the Storage for Screen Recordings section under the Storage Requirements section for more information on storage requirements.

Click the **Next** button to continue.



Add Hardware

Advanced Options

These advanced options do not usually need to be changed.

Specify the advanced options for this virtual disk. These options do not normally need to be changed.

Virtual Device Node

● SCSI (0:1)

○ IDE (0:0)

Mode

□ Independent

Independent disks are not affected by snapshots.

○ Persistent

Changes are immediately and permanently written to the disk.

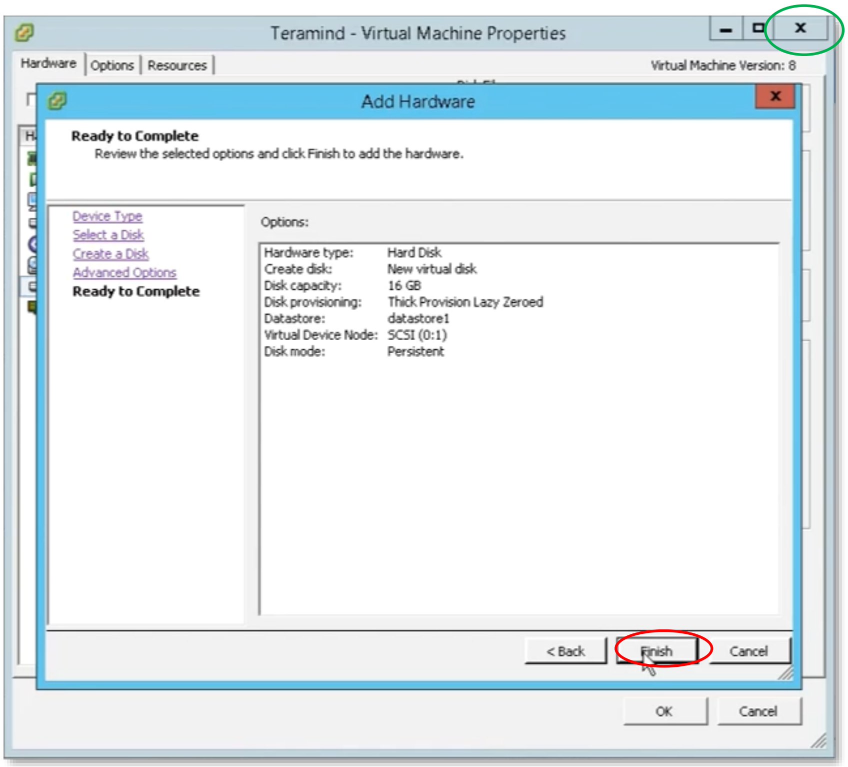
○ Nonpersistent

Changes to this disk are discarded when you power off or revert to the snapshot.

Step 1-14

You can keep the default settings as-is for the *Advanced Options* screen.

Click the **Next** button to continue.



Ready to Complete

Review the selected options and click Finish to add the hardware.

Options:

```
Hardware type:        Hard Disk
Create disk:          New virtual disk
Disk capacity:        16 GB
Disk provisioning:    Thick Provision Lazy Zeroed
Datastore:            datastore1
Virtual Device Node:  SCSI (0:1)
Disk mode:            Persistent
```

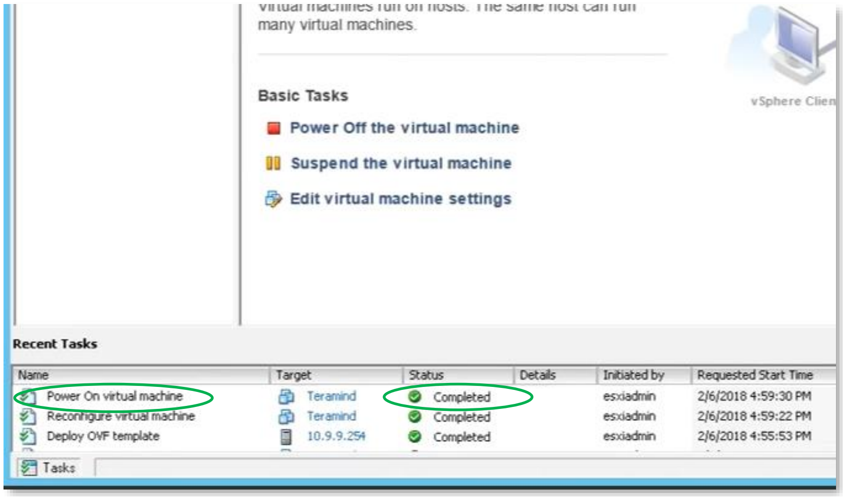
Step 1-15

The Ready to Complete screen will show a summary of your disk.

Click the **Finish** button to finish setting up the disk.

Close the *Virtual Machine Properties* window to go back to the main vSphere interface.

Next, we will power up the virtual machine.



Virtual machines run on hosts. The same host can run many virtual machines.

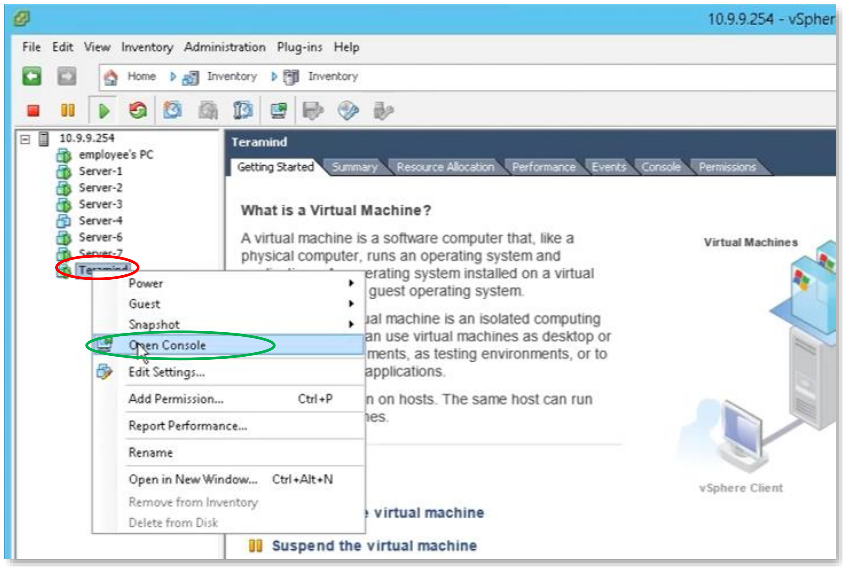
vSphere Clien
Basic Tasks
Power Off the virtual machine
Suspend the virtual machine
Edit virtual machine settings
Tasks

Recent Tasks

Name	Target	Status	Details	Initiated by	Requested Start Time
Power On virtual machine	Teramind	Completed		esxiadmin	2/6/2018 4:59:30 PM
Reconfigure virtual machine	Teramind	Completed		esxiadmin	2/6/2018 4:59:22 PM
Deploy OVF template	10.9.9.254	Completed		esxiadmin	2/6/2018 4:55:53 PM

Step 1-16

You can see the **status** of the machine under the *Recent Tasks* list.



What is a Virtual Machine?

A virtual machine is a software computer that, like a physical computer, runs an operating system and … erating system installed on a virtual … guest operating system.

… ual machine is an isolated computing … an use virtual machines as desktop or … ments, as testing environments, or to … applications.

… n on hosts. The same host can run … es.

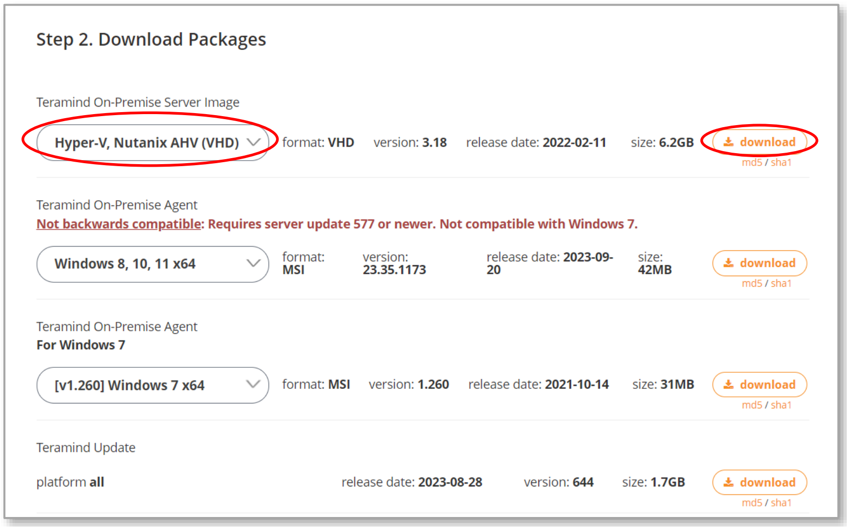
Step 1-17

Once the VM is powered up, right-click the VM **Teramind** and select **Open Console** from the pop-up menu.

Once the console window opens, you will be able to set up the IP, network and assign machine role(s).

Proceed to ***Step 2: Setting Up the IP, Network and Machine Role(s)*** to continue.

1 Setting Up a Virtual Server with Hyper-V



Step 2. Download Packages

Teramind On-Premise Server Image

Hyper-V, Nutanix AHV (VHD) | format: VHD | version: 3.18 | release date: 2022-02-11 | size: 6.2GB | download md5 / sha1

Teramind On-Premise Agent
Not backwards compatible: Requires server update 577 or newer. Not compatible with Windows 7.

Windows 8, 10, 11 x64 | format: MSI | version: 23.35.1173 | release date: 2023-09-20 | size: 42MB | download md5 / sha1

Teramind On-Premise Agent
For Windows 7

[v1.260] Windows 7 x64 | format: MSI | version: 1.260 | release date: 2021-10-14 | size: 31MB | download md5 / sha1

Teramind Update

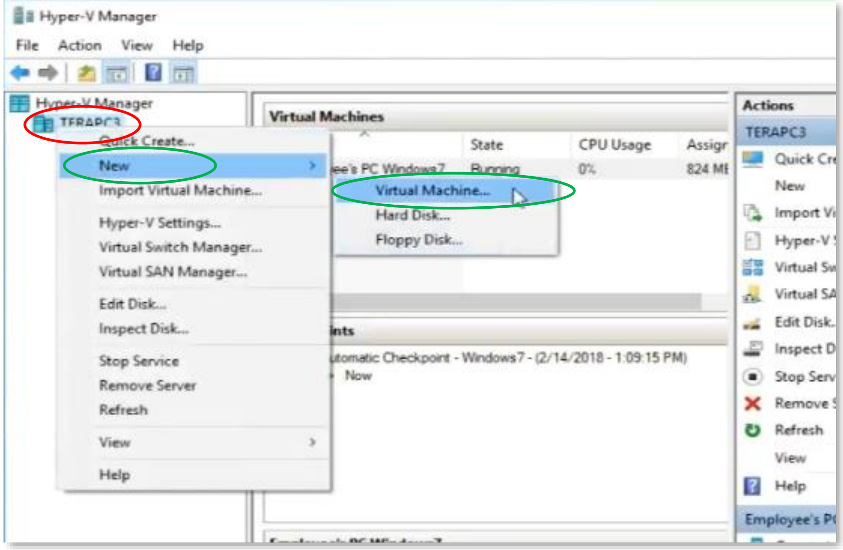
platform all | release date: 2023-08-28 | version: 644 | size: 1.7GB | download md5 / sha1

Step 1-1

Go to the **Download** section of the Teramind [Self-Hosted Portal]().

Scroll down to the *Step 2: Download Packages* section.

Select **Hyper-V, Nutanix AHV (VHD)** from the *Teramind On-Premise Server Image* drop-down list and click the **download** button to download the VHD file. You will need this file in Step 1-8.

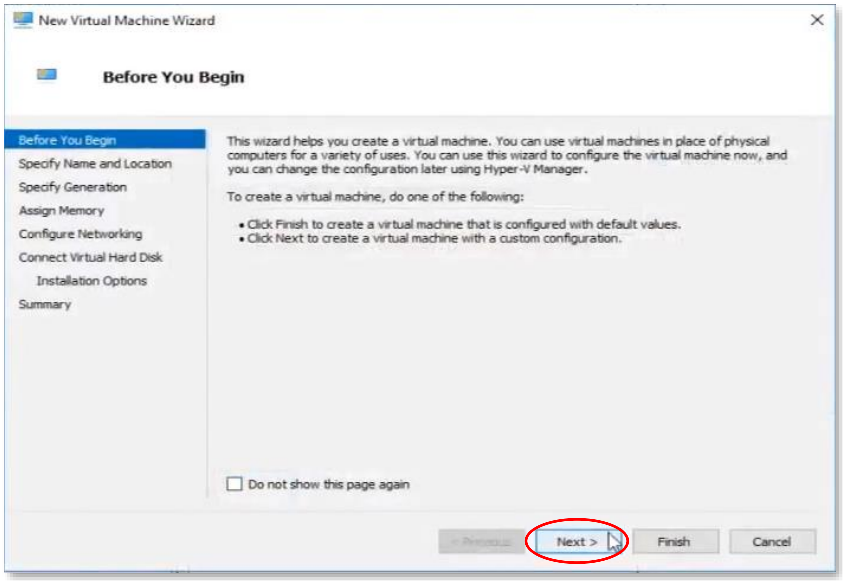


Step 1-2

From the Hyper-V Manager interface, in the left pane, right-click on the **Hyper-V host** that you wish to host the new virtual machine.

From the pop-up menu, select **New** then **Virtual Machine…**

A *New Virtual Machine Wizard* window will appear.



This wizard helps you create a virtual machine. You can use virtual machines in place of physical computers for a variety of uses. You can use this wizard to configure the virtual machine now, and you can change the configuration later using Hyper-V Manager.

To create a virtual machine, do one of the following:

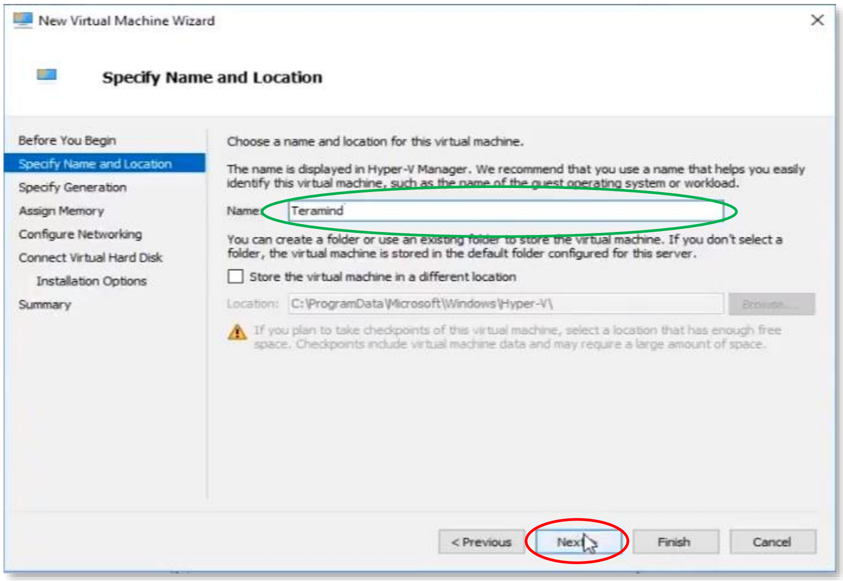
- Click Finish to create a virtual machine that is configured with default values.
- Click Next to create a virtual machine with a custom configuration.

□ Do not show this page again

Step 1-3

You can skip the first screen *Before You Begin* on the *New Virtual Machine Wizard* window.

Click the **Next** button to continue.



Choose a name and location for this virtual machine.

The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload.

Name: Teramind

You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server.

□ Store the virtual machine in a different location

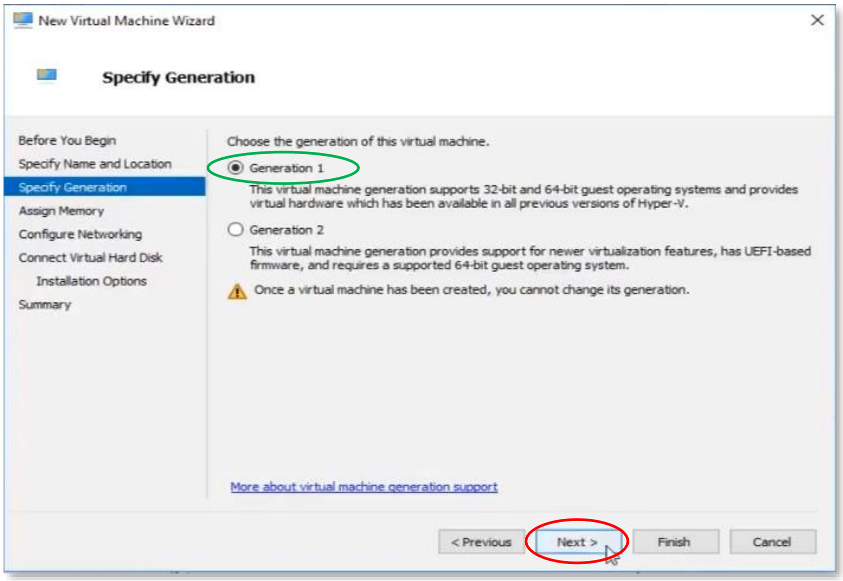
Location: C:\ProgramData\Microsoft\Windows\Hyper-V\

⚠ If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space.

Step 1-4

On the *Specify Name and Location* screen, enter a name for your virtual machine. For example, **Teramind**.

Click the **Next** button to continue.



Specify Generation

Choose the generation of this virtual machine.

● Generation 1

This virtual machine generation supports 32-bit and 64-bit guest operating systems and provides virtual hardware which has been available in all previous versions of Hyper-V.

○ Generation 2

This virtual machine generation provides support for newer virtualization features, has UEFI-based firmware, and requires a supported 64-bit guest operating system.

⚠ Once a virtual machine has been created, you cannot change its generation.

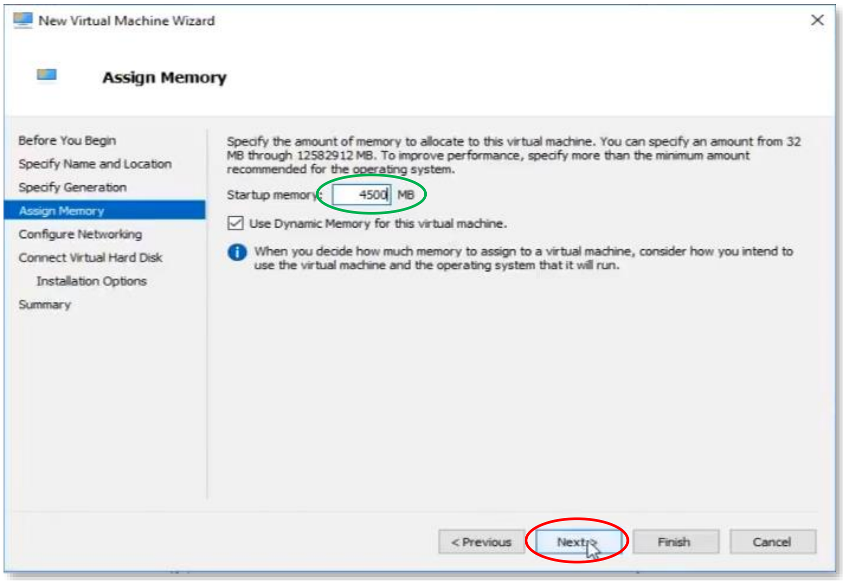
More about virtual machine generation support

Step 1-5

On the *Specify Generation* screen, select **Generation 1**.

Click the **Next** button to continue.

You have to use the Generation 1 VM type, otherwise, you won't be able to attach a VHD disk to it.



Assign Memory

Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 12582912 MB. To improve performance, specify more than the minimum amount recommended for the operating system.

Startup memory: 4500 MB

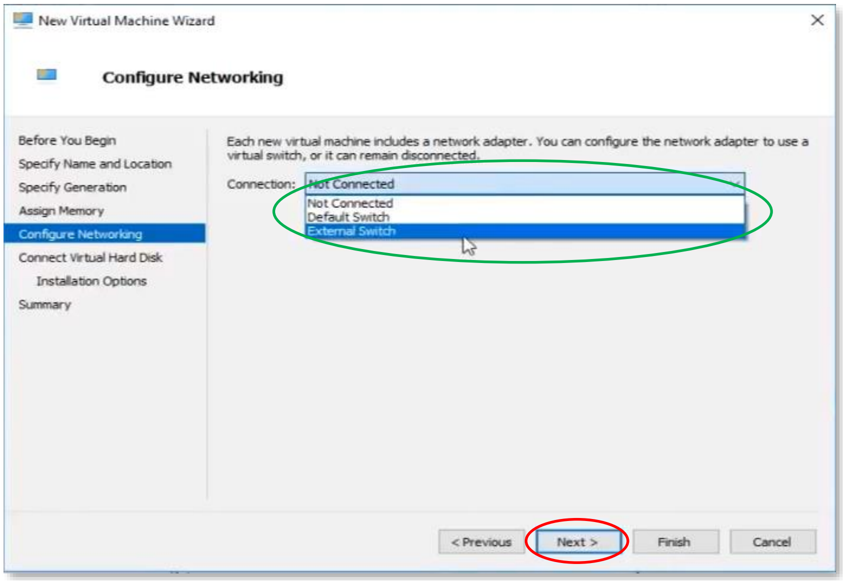
☑ Use Dynamic Memory for this virtual machine.

When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.

Step 1-6

On the *Assign Memory* screen, you can enter the **Startup memory**. You can use the Primary Server Requirements section to get an idea. For this tutorial, we will use 4500 MB or about 4 GB.

Click the **Next** button to continue.



New Virtual Machine Wizard

Configure Networking

- Before You Begin
- Specify Name and Location
- Specify Generation
- Assign Memory
- Configure Networking
- Connect Virtual Hard Disk
  - Installation Options
- Summary

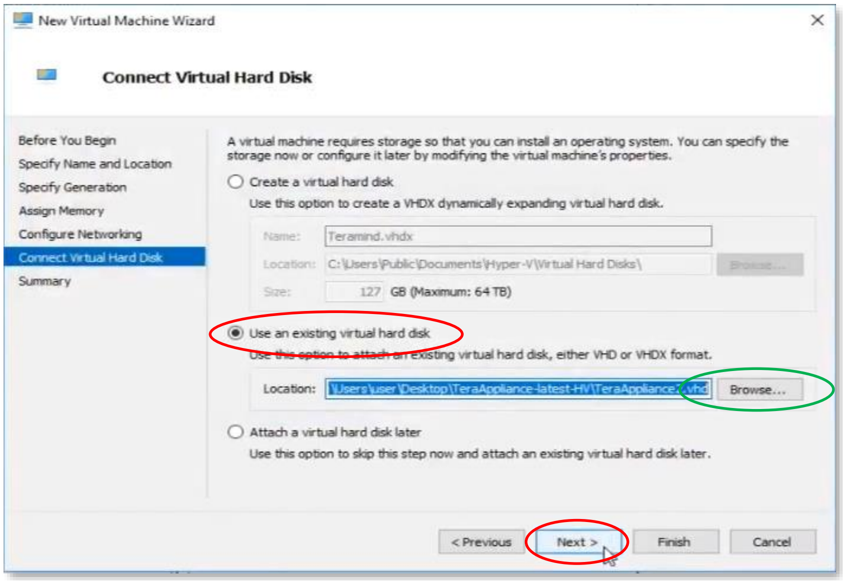
Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.

Connection: Not Connected

Step 1-7

On the *Configure Networking* screen, you can choose your network connection. Select **External Switch** from the *Connection* list.

Click the **Next** button to continue.



New Virtual Machine Wizard

Connect Virtual Hard Disk

- Before You Begin
- Specify Name and Location
- Specify Generation
- Assign Memory
- Configure Networking
- Connect Virtual Hard Disk
- Summary

A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure it later by modifying the virtual machine's properties.

○ Create a virtual hard disk

Use this option to create a VHDX dynamically expanding virtual hard disk.

Name: Teramind.vhdx

Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\

Size: 127 GB (Maximum: 64 TB)

● Use an existing virtual hard disk

Use this option to attach an existing virtual hard disk, either VHD or VHDX format.

Location: \Users\user\Desktop\TeraAppliance-latest-HV\TeraAppliance.vhd

○ Attach a virtual hard disk later

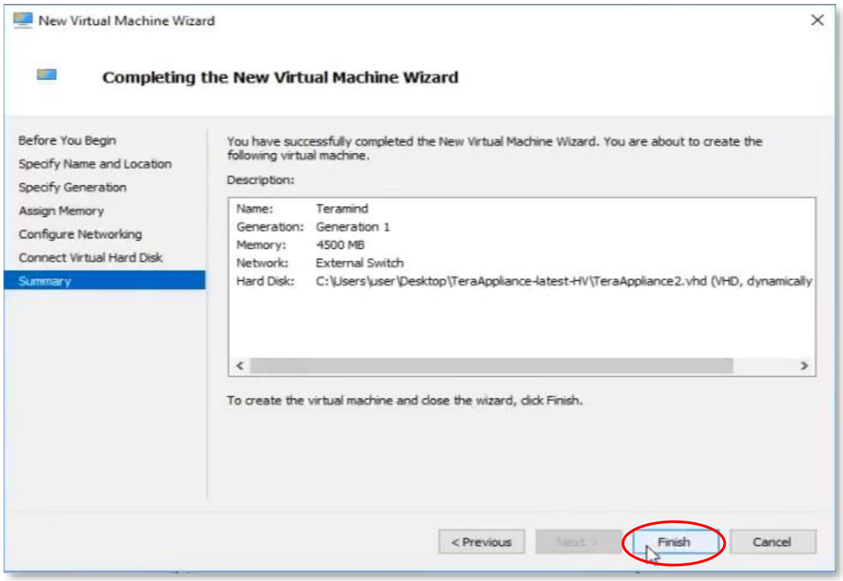
Use this option to skip this step now and attach an existing virtual hard disk later.

Step 1-8

On the *Connect Virtual Hard Disk* screen, select the **Use an existing virtual hard disk** option and then click the **Browse…** button.

When prompted, select the Teramind Server VHD file you downloaded in Step 1-1.

Once the file is loaded, click the **Next** button to continue.



Completing the New Virtual Machine Wizard

You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine.

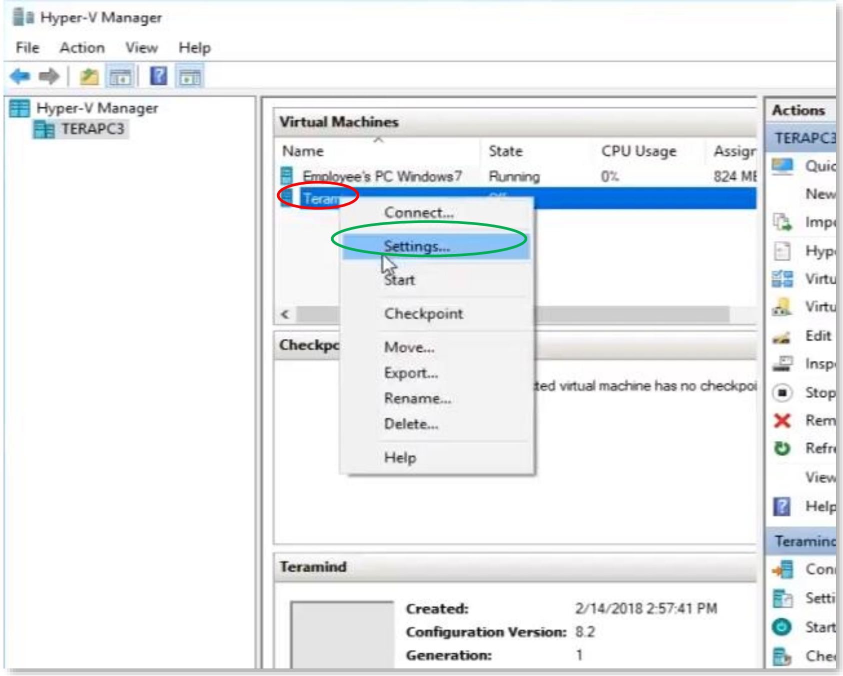
Description:

Name:	Teramind
Generation:	Generation 1
Memory:	4500 MB
Network:	External Switch
Hard Disk:	C:\Users\user\Desktop\TeraAppliance-latest-HV\TeraAppliance2.vhd (VHD, dynamically

To create the virtual machine and close the wizard, click Finish.

Step 1-9

On the *Summary* screen, you can see a summary of your VM's settings. Click the **Finish** button to start the VM deployment process.



Virtual Machines

Name	State	CPU Usage	Assign
Employee's PC Windows7	Running	0%	824 MB
Teram	Off		

Checkpo

ted virtual machine has no checkpoi

Teramind

Created:	2/14/2018 2:57:41 PM
Configuration Version:	8.2
Generation:	1

Step 1-10

Once the deployment is finished, you can see your newly created VM, **Teramind** on the main Hyper-V Manager interface, under the *Virtual Machines* panel.

We will now add a second volume to hold the screen recordings.

Right-click the Teramind VM and select **Settings…** from the pop-up menu.

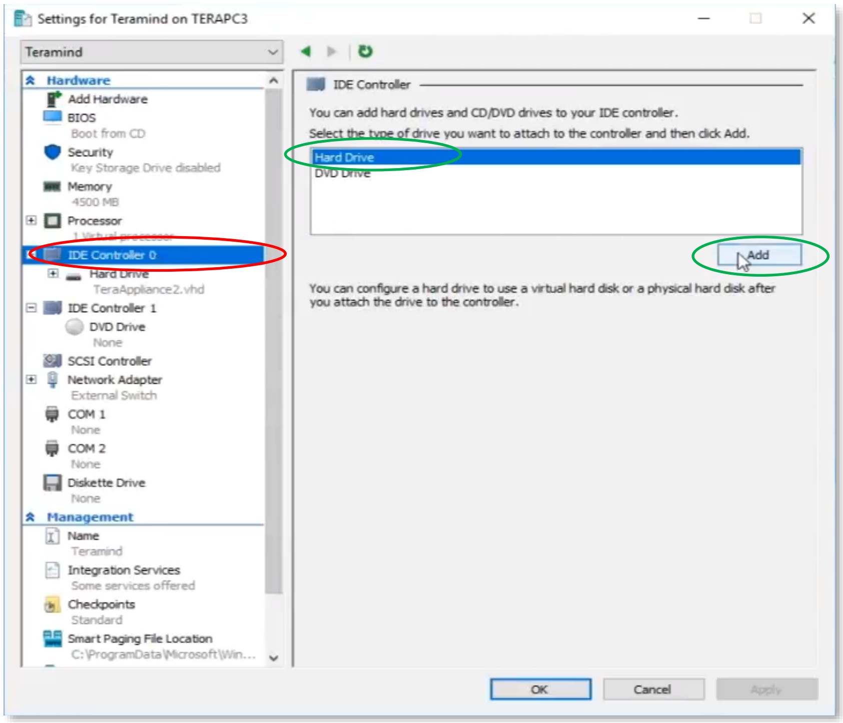
The VM *Settings for Teramind on [your VM host name]* window will open.

Step 1-11

Select the **IDE Controller 0** from the list of hardware on the left panel.

Then, on the right, select **Hard Drive** and click the **Add** button.

A new virtual drive will be added under your primary drive on the left panel.



Settings for Teramind on TERAPC3

IDE Controller

You can add hard drives and CD/DVD drives to your IDE controller.

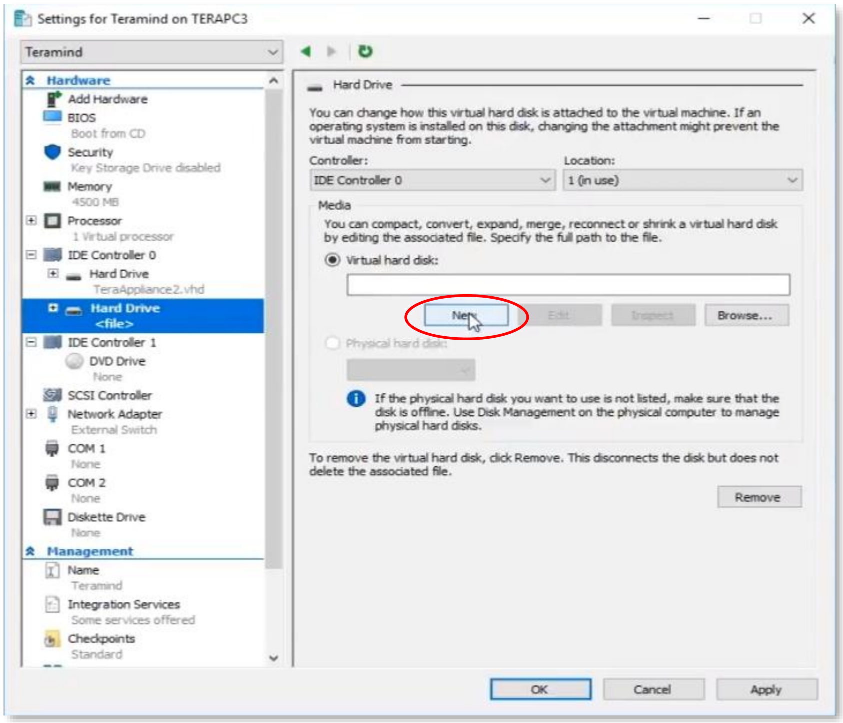
Select the type of drive you want to attach to the controller and then click Add.

You can configure a hard drive to use a virtual hard disk or a physical hard disk after you attach the drive to the controller.

Step 1-12

Click the **New** button on the new *Hard Drive* screen.

The *New Virtual Hard Disk Wizard* window will open.



Settings for Teramind on TERAPC3

Hard Drive

You can change how this virtual hard disk is attached to the virtual machine. If an operating system is installed on this disk, changing the attachment might prevent the virtual machine from starting.

Controller: IDE Controller 0

Location: 1 (in use)

Media

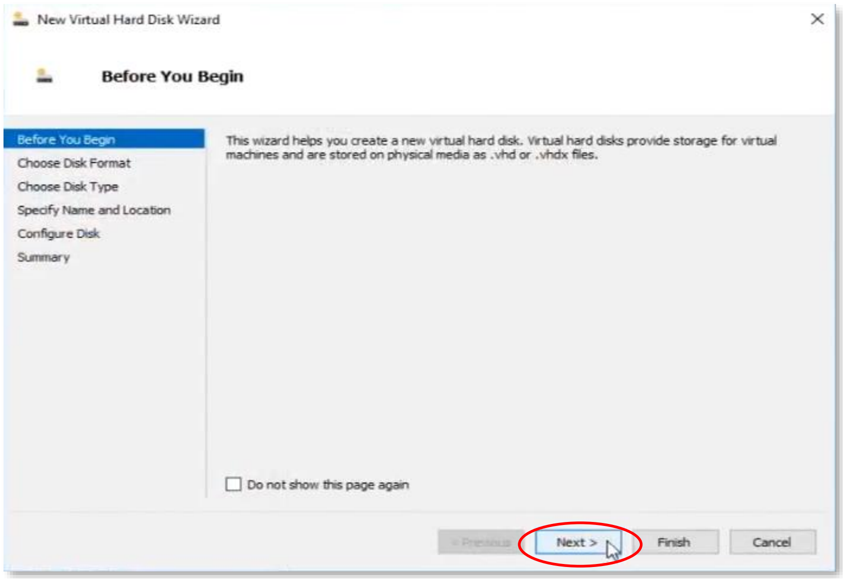
You can compact, convert, expand, merge, reconnect or shrink a virtual hard disk by editing the associated file. Specify the full path to the file.

● Virtual hard disk:

○ Physical hard disk:

If the physical hard disk you want to use is not listed, make sure that the disk is offline. Use Disk Management on the physical computer to manage physical hard disks.

To remove the virtual hard disk, click Remove. This disconnects the disk but does not delete the associated file.



New Virtual Hard Disk Wizard

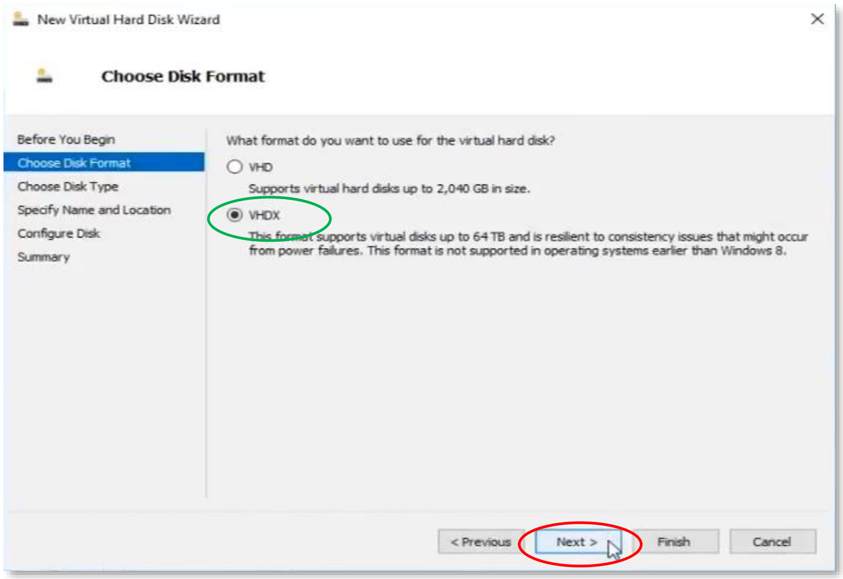
Before You Begin

This wizard helps you create a new virtual hard disk. Virtual hard disks provide storage for virtual machines and are stored on physical media as .vhd or .vhdx files.

□ Do not show this page again

Step 1-13

You can skip the first screen, *Before You Begin* on the *New Virtual Hard Disk Wizard* screen by clicking the **Next** button.



New Virtual Hard Disk Wizard

Choose Disk Format

What format do you want to use for the virtual hard disk?

○ VHD

Supports virtual hard disks up to 2,040 GB in size.

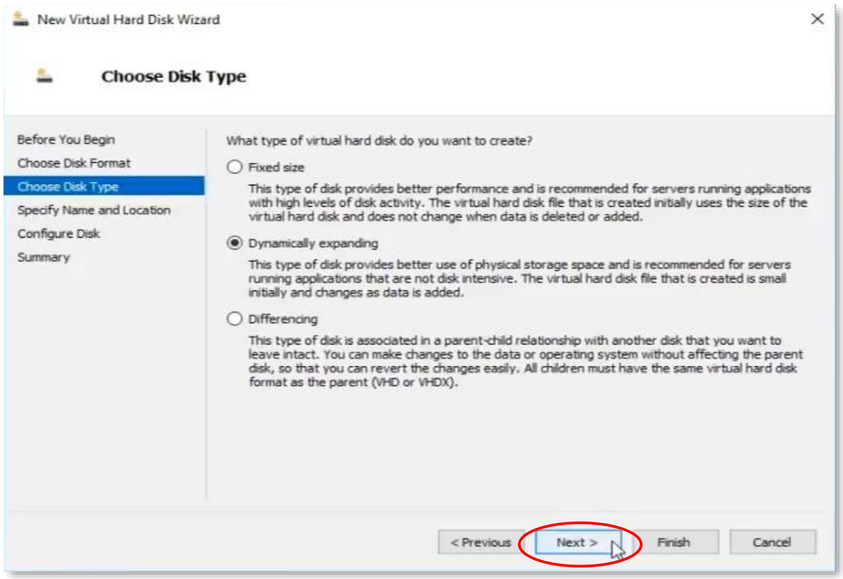
● VHDX

This format supports virtual disks up to 64 TB and is resilient to consistency issues that might occur from power failures. This format is not supported in operating systems earlier than Windows 8.

Step 1-14

On the *Choose Disk Format* screen, make sure **VHDX** is selected.

Click the **Next** button to continue.



Choose Disk Type

What type of virtual hard disk do you want to create?

○ Fixed size

This type of disk provides better performance and is recommended for servers running applications with high levels of disk activity. The virtual hard disk file that is created initially uses the size of the virtual hard disk and does not change when data is deleted or added.

● Dynamically expanding

This type of disk provides better use of physical storage space and is recommended for servers running applications that are not disk intensive. The virtual hard disk file that is created is small initially and changes as data is added.

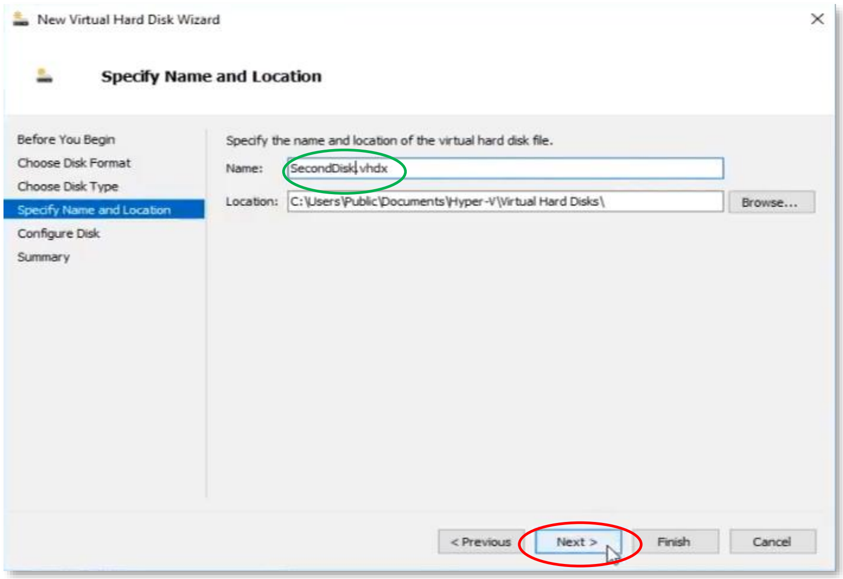
○ Differencing

This type of disk is associated in a parent-child relationship with another disk that you want to leave intact. You can make changes to the data or operating system without affecting the parent disk, so that you can revert the changes easily. All children must have the same virtual hard disk format as the parent (VHD or VHDX).

Step 1-15

You can keep the default settings as-is on the *Choose Disk Type* screen.

Click the **Next** button to continue.



Specify Name and Location

Specify the name and location of the virtual hard disk file.

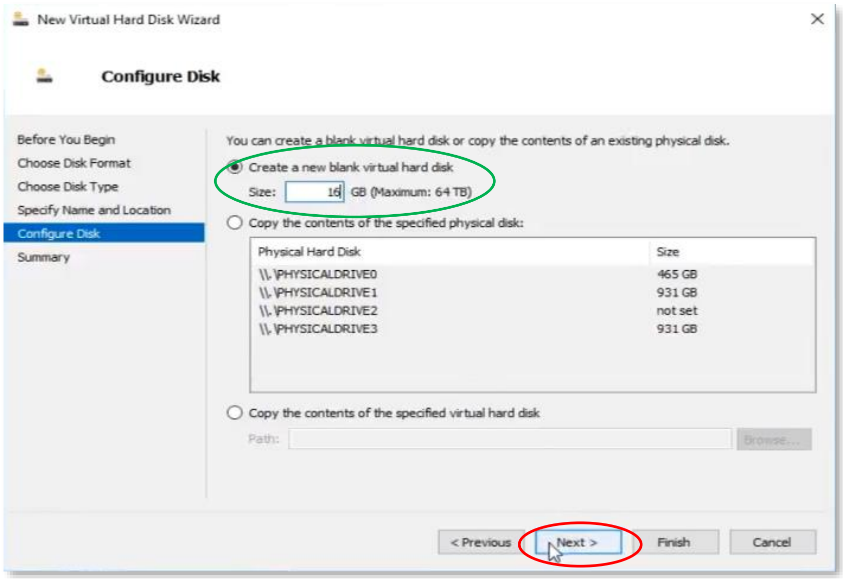
Name: SecondDisk.vhdx

Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\

Step 1-16

On the *Specify Name and Location* screen, give your virtual hard disk a name For example, **SecondDisk**. For location, you can keep the default path or change it wherever you want to store the virtual hard disk.

Click the **Next** button to continue.



New Virtual Hard Disk Wizard

Configure Disk

You can create a blank virtual hard disk or copy the contents of an existing physical disk.

● Create a new blank virtual hard disk

Size: 16 GB (Maximum: 64 TB)

○ Copy the contents of the specified physical disk:

Physical Hard Disk	Size
\\.\PHYSICALDRIVE0	465 GB
\\.\PHYSICALDRIVE1	931 GB
\\.\PHYSICALDRIVE2	not set
\\.\PHYSICALDRIVE3	931 GB

○ Copy the contents of the specified virtual hard disk

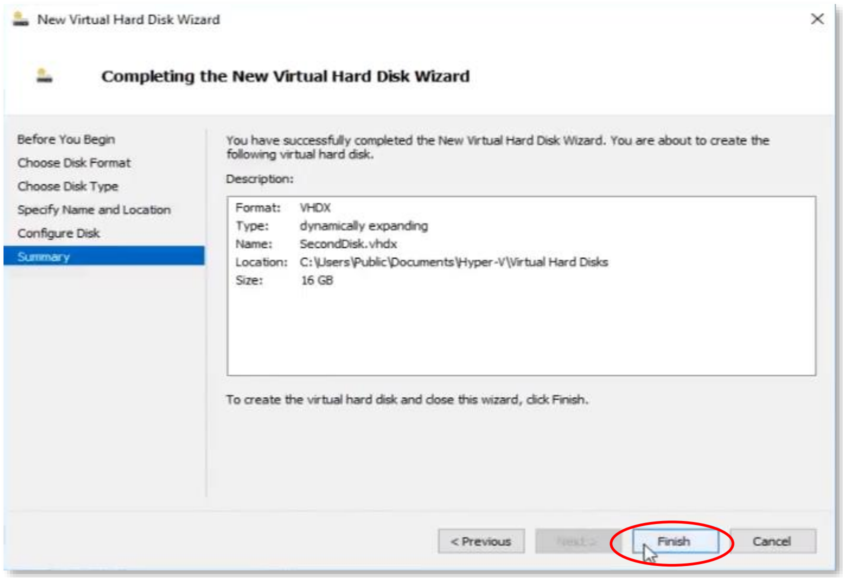
Path:

Step 1-17

On the *Configure Disk* screen, select the **Create a new blank virtual hard disk** option. For the **Size** parameter, you can start with a small allocation (i.e. 16 GB) and then increase as needed.

Please check the Storage for Screen Recordings section under the Storage Requirements section for more information on storage requirements.

Click the **Next** button to continue.



New Virtual Hard Disk Wizard

Completing the New Virtual Hard Disk Wizard

You have successfully completed the New Virtual Hard Disk Wizard. You are about to create the following virtual hard disk.

Description:

```
Format:    VHDX
Type:      dynamically expanding
Name:      SecondDisk.vhdx
Location:  C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks
Size:      16 GB
```

To create the virtual hard disk and close this wizard, click Finish.

Step 1-18

The *Summary* screen will show a summary of your disk.

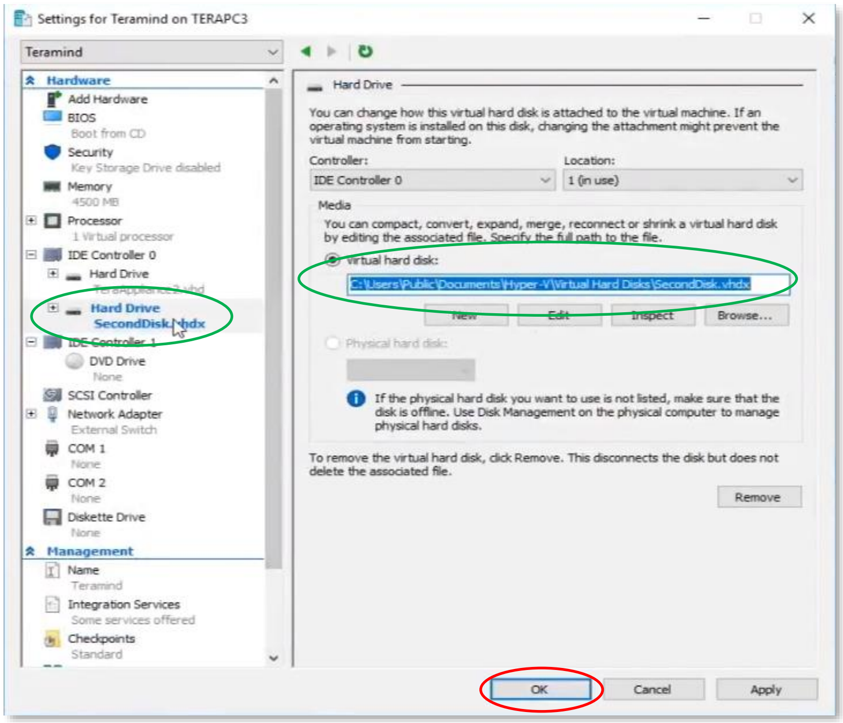
Click the **Finish** button to finish setting up the disk. The wizard window will close automatically and return you to the VM settings window.

Step 1-19

You can see the newly created virtual hard disk **SecondDisk** under the *IDE Controller 0*. The path to the hard disk will also be shown on the right panel on the **Virtual hard disk field**.

Click the **OK** button to save the changes and close the Settings window.

We are now ready to start the server.



You can change how this virtual hard disk is attached to the virtual machine. If an operating system is installed on this disk, changing the attachment might prevent the virtual machine from starting.

Controller: IDE Controller 0

Location: 1 (in use)

Media

You can compact, convert, expand, merge, reconnect or shrink a virtual hard disk by editing the associated file. Specify the full path to the file.

● Virtual hard disk:

C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\SecondDisk.vhdx

○ Physical hard disk:

If the physical hard disk you want to use is not listed, make sure that the disk is offline. Use Disk Management on the physical computer to manage physical hard disks.

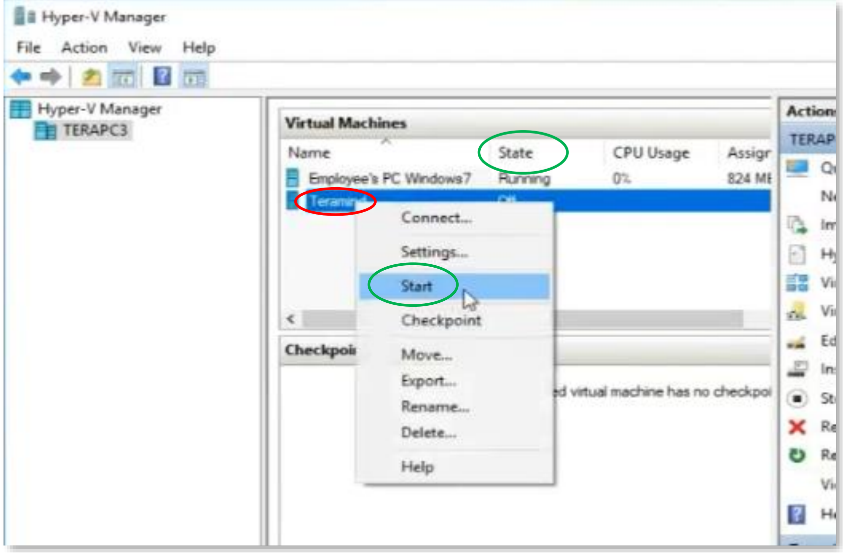
To remove the virtual hard disk, click Remove. This disconnects the disk but does not delete the associated file.

Step 1-20

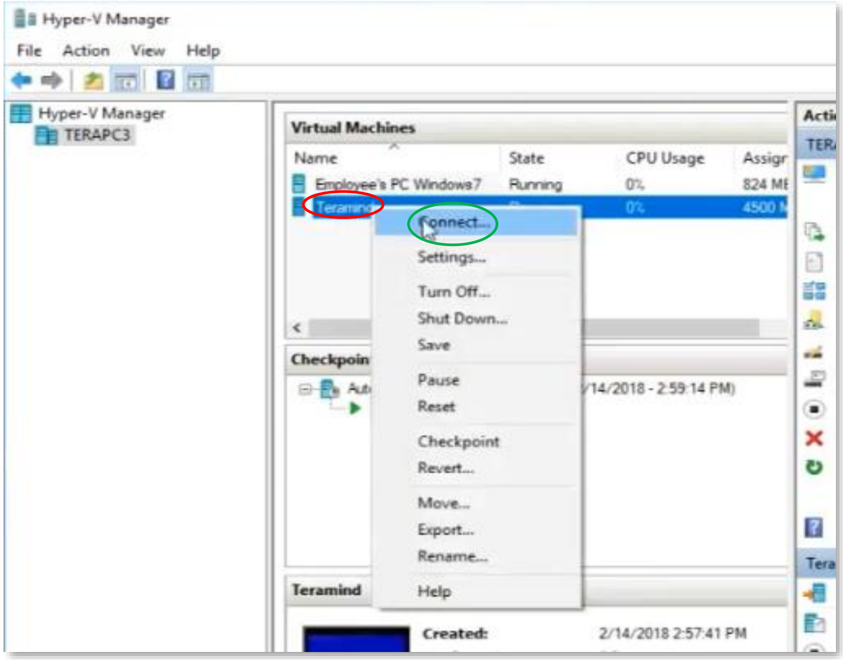
On the main Hyper-V Manager interface, under the *Virtual Machines* panel locate the VM **Teramind**.

Right-click on it, and select **Start** from the pop-up menu to start the server.

When the VM is ready, the **State** of the server will change from *Off* to *Running.*



Name	State	CPU Usage	Assign
Employee's PC Windows7	Running	0%	824 MB
Teramind	Off		



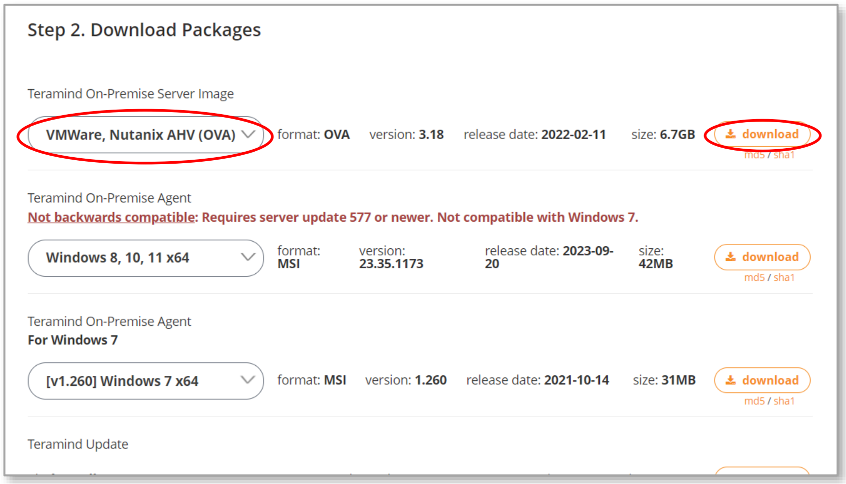
Step 1-21

When the VM is ready, right-click the **Teramind** VM again and select **Connect…** from the pop-up menu to open the Console window.

Once the console window opens, you will be able to set up the IP, network and assign machine role(s).

Proceed to ***Step 2: Setting Up the IP, Network and Machine Role(s)*** to continue.

1 Setting Up a Virtual Server with Nutanix AHV (OVA Method)



Step 2. Download Packages

Teramind On-Premise Server Image

VMWare, Nutanix AHV (OVA) format: OVA version: 3.18 release date: 2022-02-11 size: 6.7GB download md5 / sha1

Teramind On-Premise Agent
Not backwards compatible: Requires server update 577 or newer. Not compatible with Windows 7.

Windows 8, 10, 11 x64 format: MSI version: 23.35.1173 release date: 2023-09-20 size: 42MB download md5 / sha1

Teramind On-Premise Agent
For Windows 7

[v1.260] Windows 7 x64 format: MSI version: 1.260 release date: 2021-10-14 size: 31MB download md5 / sha1

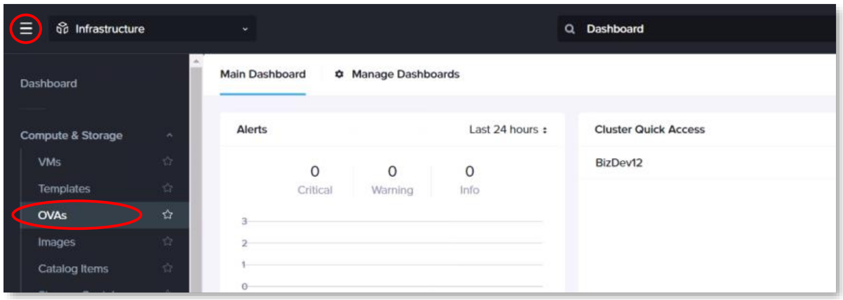
Teramind Update

Step 1-1

Go to the **Download** section of the Teramind Self-Hosted Portal.

Scroll down to the *Step 2: Download Packages* section.

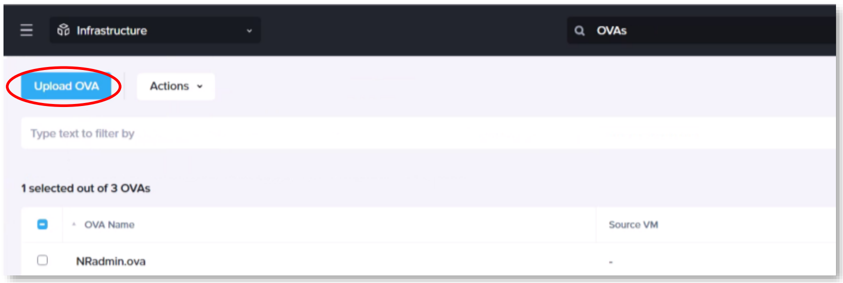
Select **VMWare, Nutanix AHV (OVA)** from the *Teramind On-Premise Server Image* drop-down list and click the **download** button to download the OVA file.



Step 1-2

Open your *Prism Central* dashboard, and click the **Main Menu** icon from the top left.

Select **OVAs**.

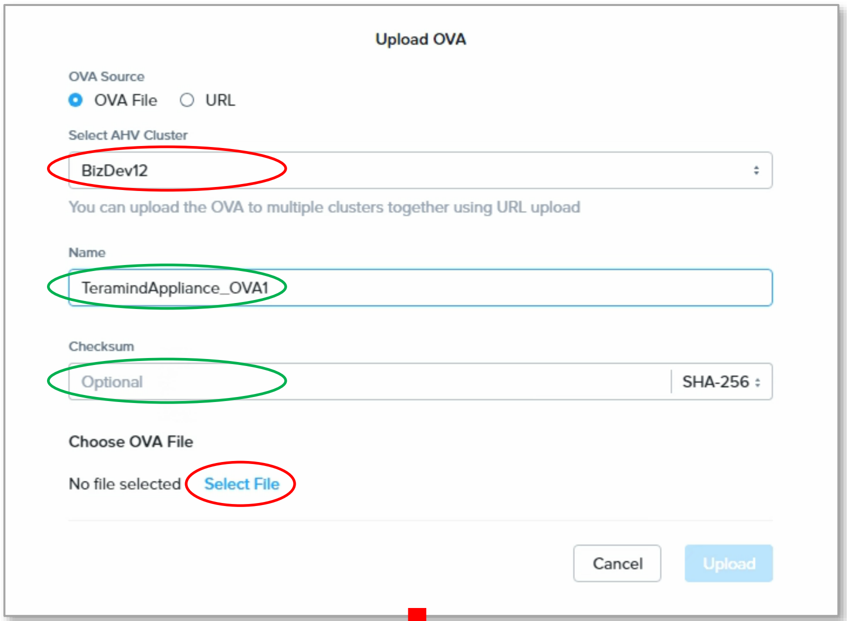


1 selected out of 3 OVAs

OVA Name	Source VM
NRadmin.ova	-

Step 1-3

Click the **Upload OVA** button located near the top-left corner.



Upload OVA

OVA Source

● OVA File ○ URL

Select AHV Cluster

BizDev12

You can upload the OVA to multiple clusters together using URL upload

Name

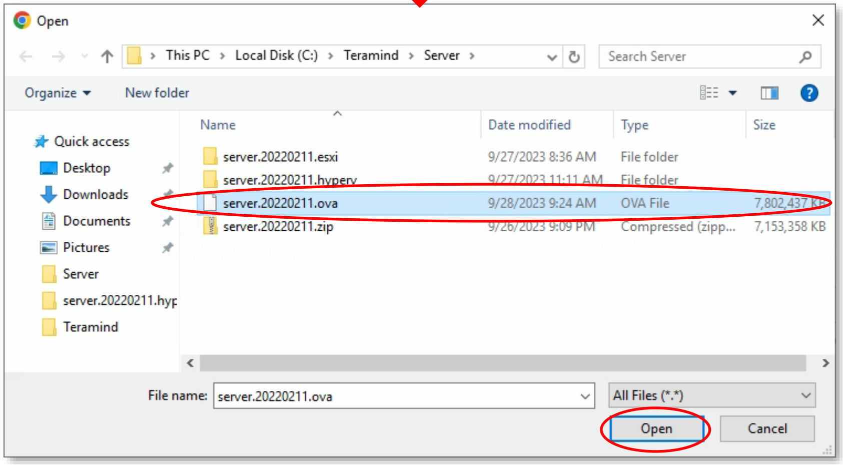
TeramindAppliance_OVA1

Checksum

Optional SHA-256

Choose OVA File

No file selected Select File



Open

This PC › Local Disk (C:) › Teramind › Server ›

Name	Date modified	Type	Size
server.20220211.esxi	9/27/2023 8:36 AM	File folder	
server.20220211.hyperv	9/27/2023 11:11 AM	File folder	
server.20220211.ova	9/28/2023 9:24 AM	OVA File	7,802,437 KB
server.20220211.zip	9/26/2023 9:09 PM	Compressed (zipp...	7,153,358 KB

File name: server.20220211.ova

All Files (*.*)

Step 1-4

On the *Upload OVA* screen, select a cluster from the **Select AHV Cluster** drop-down list.

You can optionally enter a **Name** for the OVA.

You can optionally enter a **Checksum** for the OVA.

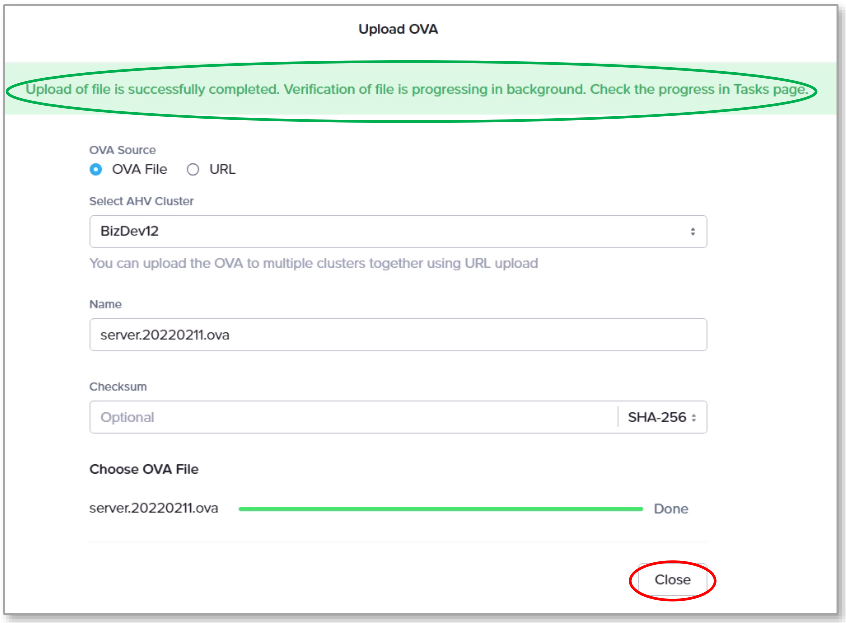
Note: you can find the checksum for the OVA on the *Self-Hosted Portal* under the **download** button, see Step 1-1).

Click the **Select File** link. A file *Open* dialogue box will pop up.

Select the **.ova** file that you downloaded in Step 1-1.

Click the **Open** button on the *Open* dialogue box.

The file will start to upload.


Upload OVA

Upload of file is successfully completed. Verification of file is progressing in background. Check the progress in Tasks page.

OVA Source
● OVA File ○ URL

Select AHV Cluster
BizDev12

You can upload the OVA to multiple clusters together using URL upload

Name
server.20220211.ova

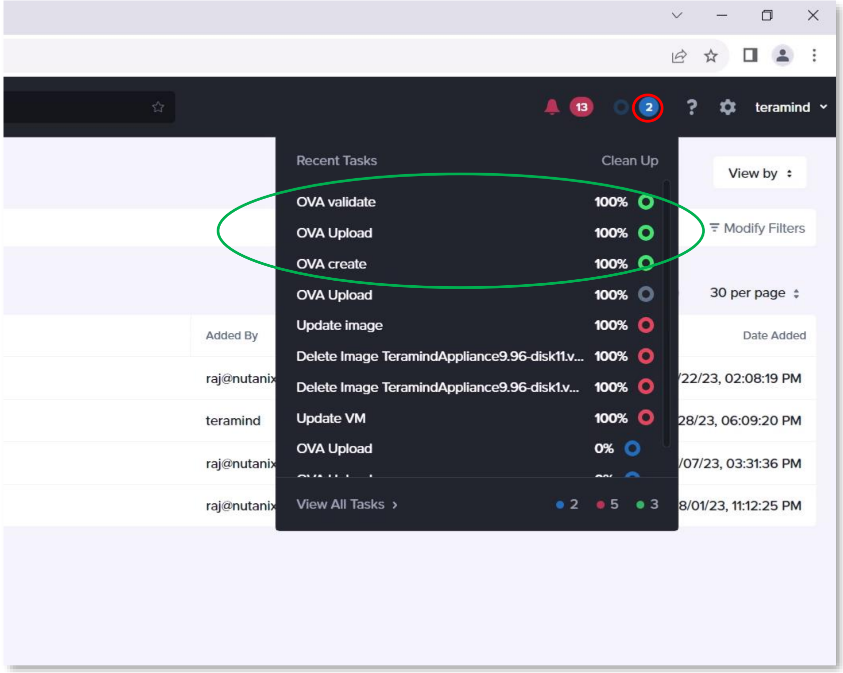
Checksum
Optional | SHA-256

Choose OVA File
server.20220211.ova Done

Step 1-5

Once the upload is completed, you will see a message that says, "Upload of file is successfully completed…".

Click the **Close** button. It will take you back to the *OVAs* screen.



Recent Tasks	Clean Up
OVA validate	100%
OVA Upload	100%
OVA create	100%
OVA Upload	100%
Update image	100%
Delete Image TeramindAppliance9.96-disk11.v...	100%
Delete Image TeramindAppliance9.96-disk1.v...	100%
Update VM	100%
OVA Upload	0%

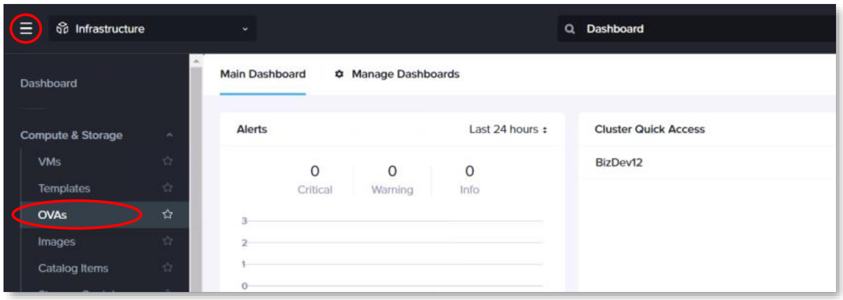
Step 1-6

When you upload an OVA, the system will perform three tasks: **OVA create**, **OVA upload** and finally, **OVA validate**.

It might take a while to complete all three tasks.

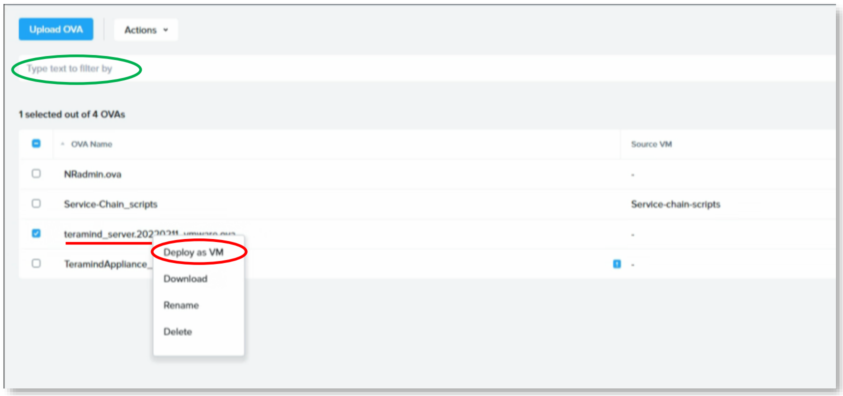
You will be able to see the status of these tasks by clicking the **Recent Tasks** icon (the icon is located near the top right corner, showing a number inside a blue circle)

When the OVA tasks are finished, you will be able to use the OVA to deploy your VM.



Step 1-7

If you aren't there already, go to the *OVAs* screen by selecting **OVAs** from the **Main Menu**.



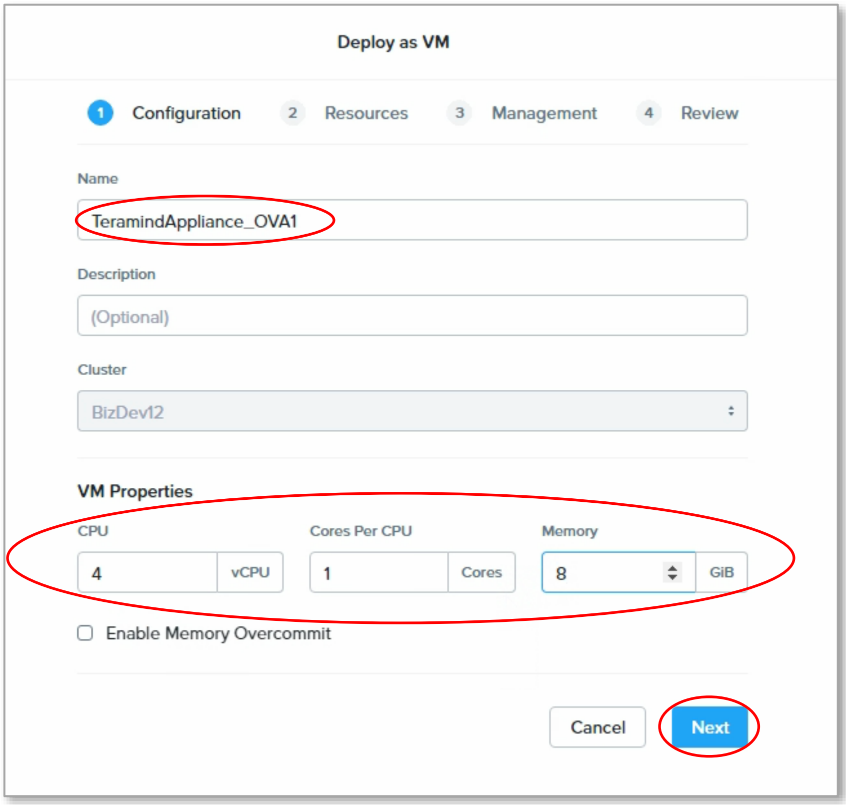
1 selected out of 4 OVAs

	OVA Name	Source VM
☐	NRadmin.ova	-
☐	Service-Chain_scripts	Service-chain-scripts
☑	teramind_server.20220211_vmware.ova	-
☐	TeramindAppliance_	-

Step 1-8

Locate the OVA you created (you can use the **filter** to narrow down the list).

Right-click on the OVA and select **Deploy as VM** from the pop-up menu. You will be taken to the *Deploy as VM* wizard screen.



Name: TeramindAppliance_OVA1

Description: (Optional)

Cluster: BizDev12

VM Properties

CPU: 4 vCPU

Cores Per CPU: 1 Cores

Memory: 8 GiB

☐ Enable Memory Overcommit

Step 1-9

On the first step, *Configuration*, enter a **Name** for your VM.

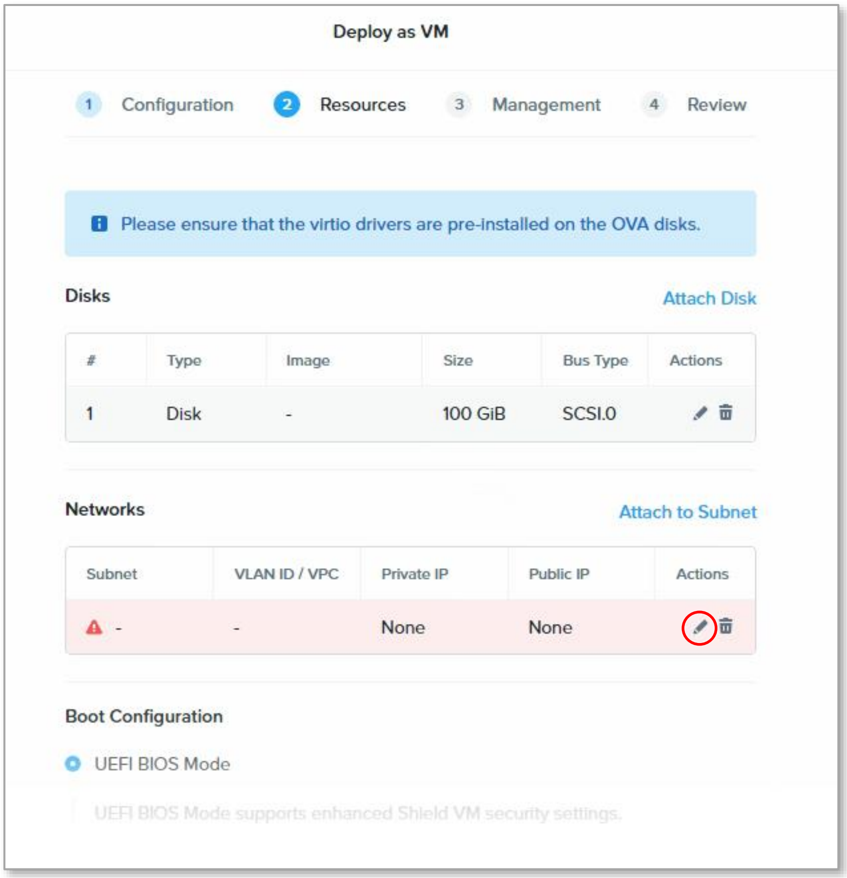
Adjust the **CPU**, **Cores Per CPU**, and **Memory** under the *VM Properties* section according to your needs. You can use the Primary Server Requirements section to get an idea of how much CPU/memory you might need.

Click the **Next** button to continue to the next step.

Step 1-10

On the second step, *Resources*, you will notice that the OVA already comes with a disk, so you don't have to add one.

Under the *Networks* section, click the **Pencil** icon next to the empty subnet (if you don't see any subnet, click the **Attach to Subnet** button). The *Update NIC* window will pop up.



Deploy as VM

Please ensure that the virtio drivers are pre-installed on the OVA disks.

Disks

#	Type	Image	Size	Bus Type	Actions
1	Disk	-	100 GiB	SCSI.0	

Networks

Subnet	VLAN ID / VPC	Private IP	Public IP	Actions
⚠ -	-	None	None	

Boot Configuration

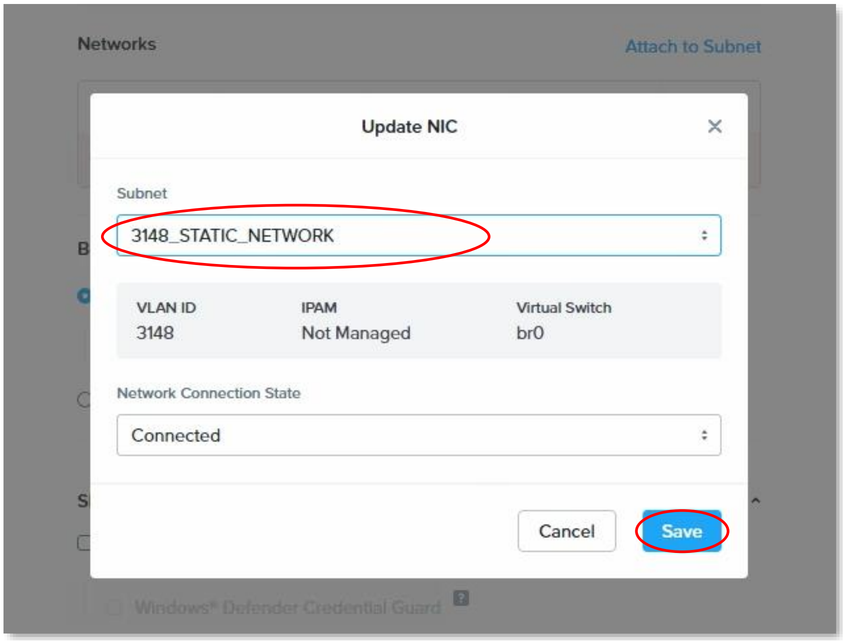
● UEFI BIOS Mode

UEFI BIOS Mode supports enhanced Shield VM security settings.

Step 1-11

On the *Update NIC* pop-up window, select an appropriate network from the **Subnet** drop-down list.

Click the **Save** button.

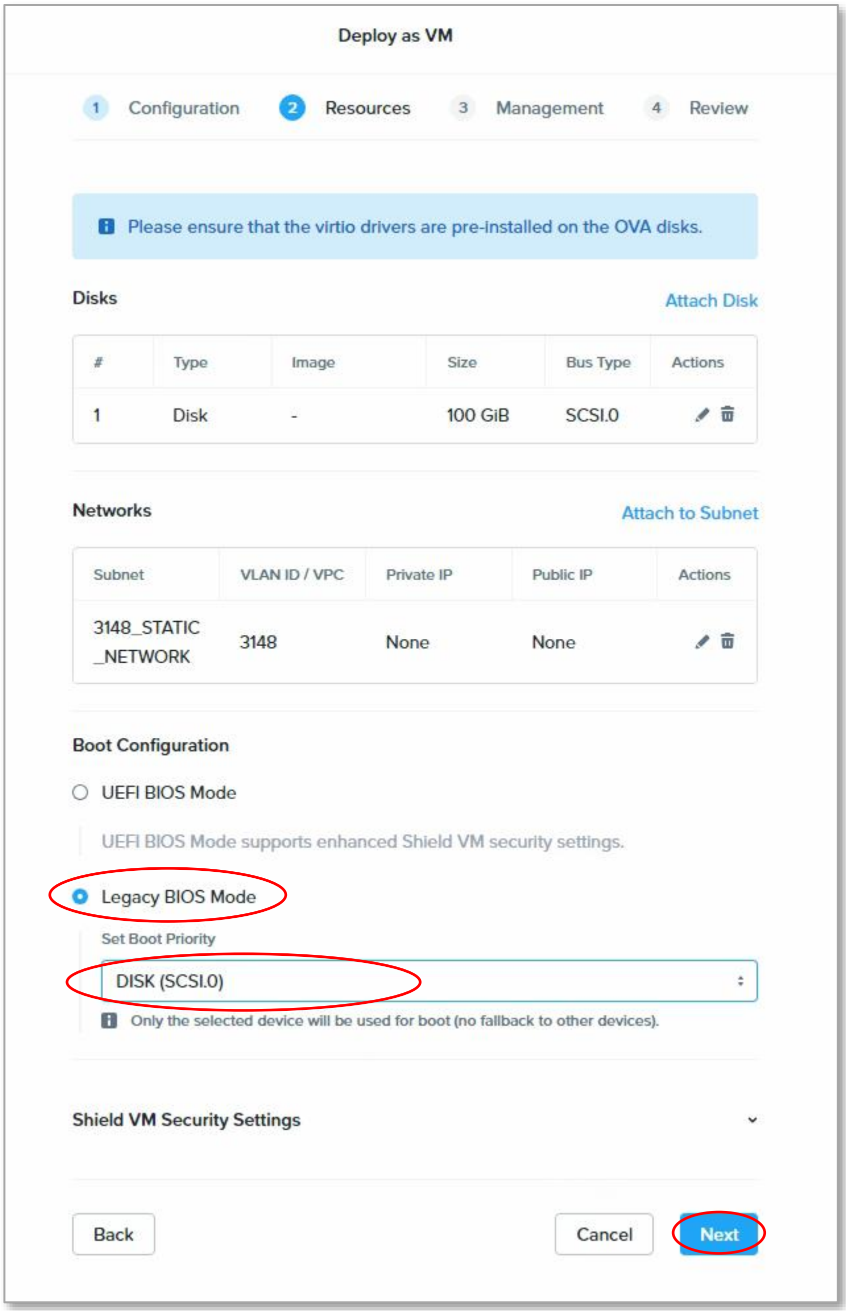


Update NIC

Subnet: 3148_STATIC_NETWORK

VLAN ID	IPAM	Virtual Switch
3148	Not Managed	br0

Network Connection State: Connected



Deploy as VM

1 Configuration 2 Resources 3 Management 4 Review

Please ensure that the virtio drivers are pre-installed on the OVA disks.

Disks Attach Disk

#	Type	Image	Size	Bus Type	Actions
1	Disk	-	100 GiB	SCSI.0	✎ 🗑

Networks Attach to Subnet

Subnet	VLAN ID / VPC	Private IP	Public IP	Actions
3148_STATIC _NETWORK	3148	None	None	✎ 🗑

Boot Configuration

○ UEFI BIOS Mode

UEFI BIOS Mode supports enhanced Shield VM security settings.

● Legacy BIOS Mode

Set Boot Priority

DISK (SCSI.0)

Only the selected device will be used for boot (no fallback to other devices).

Shield VM Security Settings

Back Cancel Next

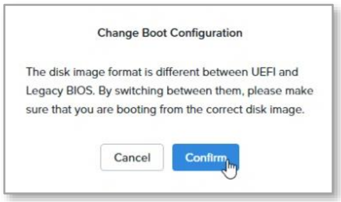
Step 1-12

Back on the *Resources* step, select the **Legacy BIOS Mode** option under the *Boot Configuration* section.

Select **DISK (SCSI)** from the *Set Boot Priority* drop-down list.

Click the **Next** button to go to the next step.

Note: you might see a warning when you change the BIOS mode:

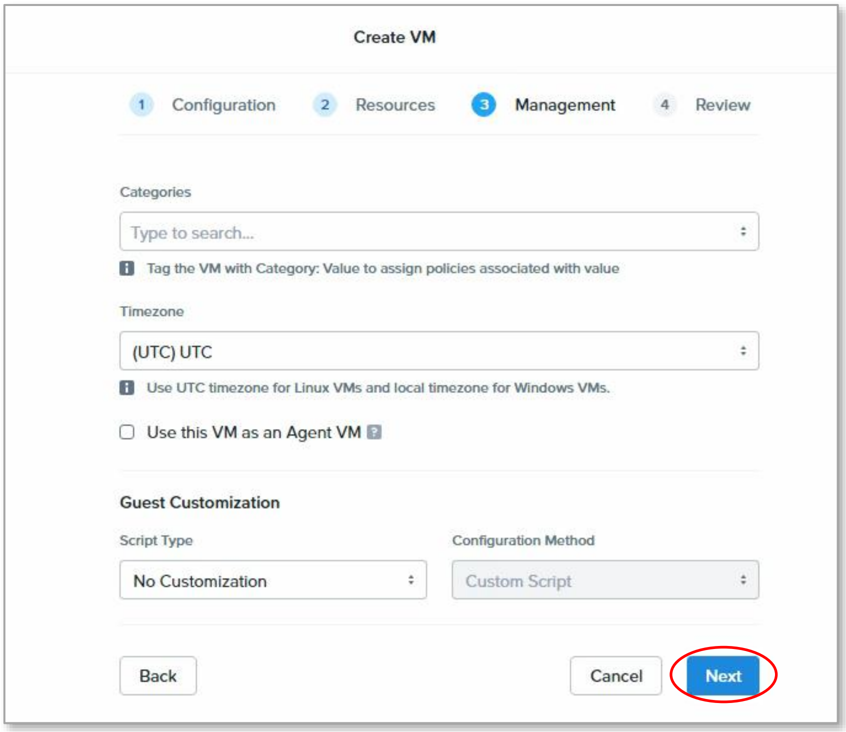


Change Boot Configuration

The disk image format is different between UEFI and Legacy BIOS. By switching between them, please make sure that you are booting from the correct disk image.

Cancel Confirm

*If you see such a warning, press the **Confirm** button on the warning dialogue box to confirm the change.*



Create VM

1 Configuration 2 Resources 3 Management 4 Review

Categories

Type to search...

Tag the VM with Category: Value to assign policies associated with value

Timezone

(UTC) UTC

Use UTC timezone for Linux VMs and local timezone for Windows VMs.

□ Use this VM as an Agent VM

Guest Customization

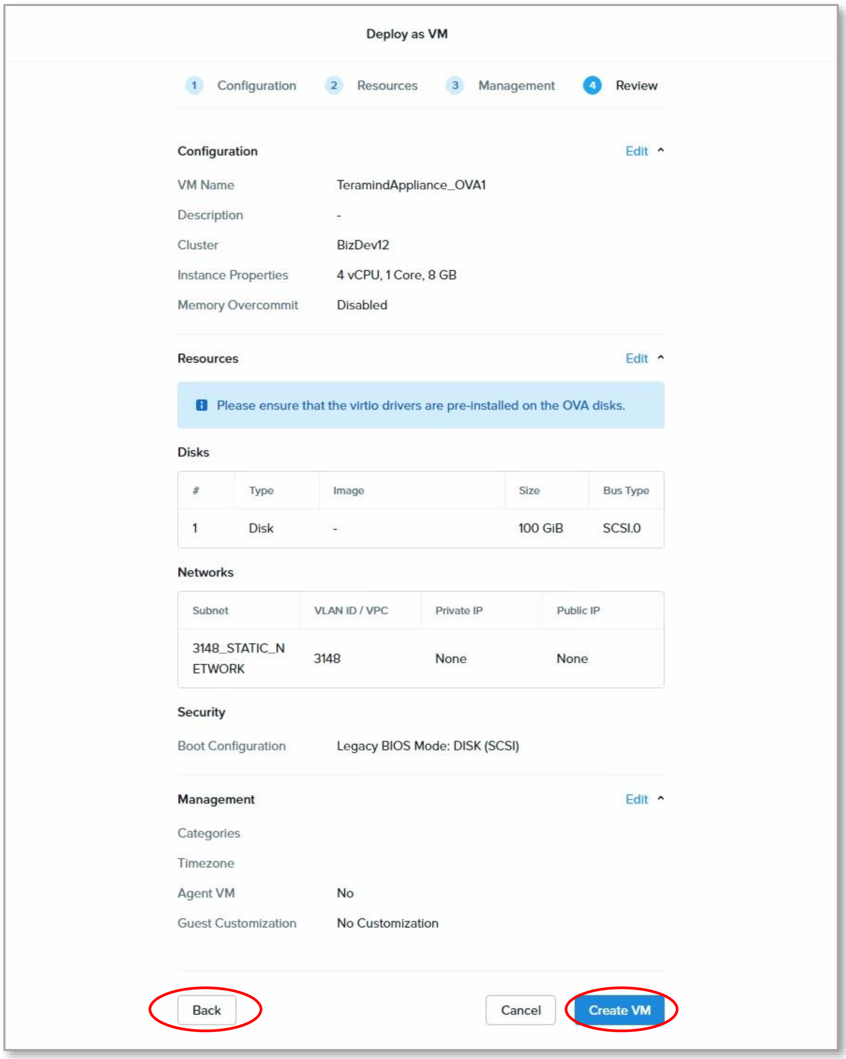
Script Type: No Customization

Configuration Method: Custom Script

Step 1-13

On the *Management* step, you can optionally configure the *Categories*, *Timezone*, and *Guest Customization*. However, in this tutorial, we will keep their default values.

Click the **Next** button to go to the next step.



Deploy as VM

Configuration

VM Name	TeramindAppliance_OVA1
Description	-
Cluster	BizDev12
Instance Properties	4 vCPU, 1 Core, 8 GB
Memory Overcommit	Disabled

Resources

Please ensure that the virtio drivers are pre-installed on the OVA disks.

Disks

#	Type	Image	Size	Bus Type
1	Disk	-	100 GiB	SCSI.0

Networks

Subnet	VLAN ID / VPC	Private IP	Public IP
3148_STATIC_NETWORK	3148	None	None

Security

Boot Configuration	Legacy BIOS Mode: DISK (SCSI)

Management

Categories	
Timezone	
Agent VM	No
Guest Customization	No Customization

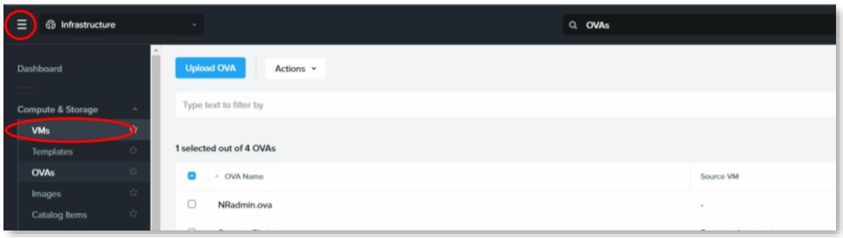
Step 1-14

On the *Review* step, verify all the settings are correct.

If needed, you can press the **Back** button to go back and make any adjustments.

Otherwise, click the **Create VM** button. You will be taken back to the *Upload OVA* screen.

Your VM will be ready within a few seconds.



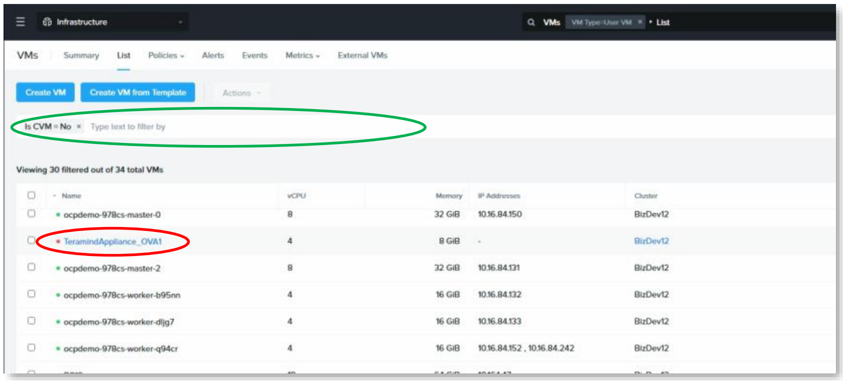
1 selected out of 4 OVAs

OVA Name	Source VM
NRadmin.ova	-

Step 1-15

Click the **Main Menu** icon from the top left corner.

Select **VMs**.



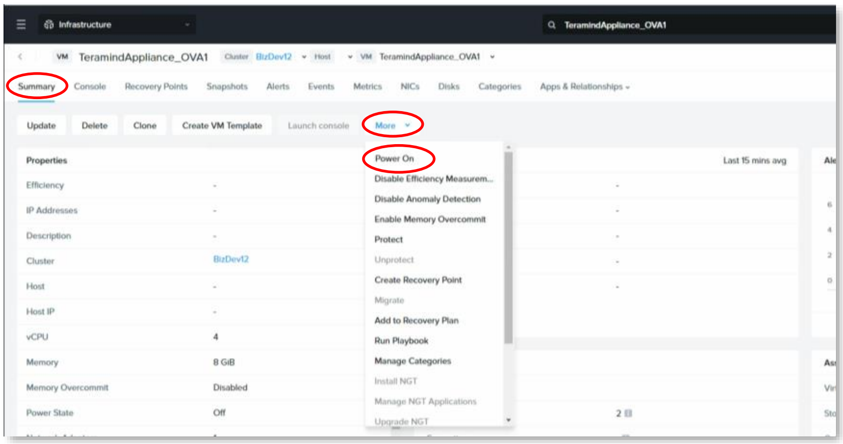
Viewing 30 filtered out of 34 total VMs

Name	vCPU	Memory	IP Addresses	Cluster
ocpdemo-978cs-master-0	8	32 GiB	10.16.84.150	BizDev12
TeramindAppliance_OVA1	4	8 GiB	-	BizDev12
ocpdemo-978cs-master-2	8	32 GiB	10.16.84.131	BizDev12
ocpdemo-978cs-worker-b95nn	4	16 GiB	10.16.84.132	BizDev12
ocpdemo-978cs-worker-dljg7	4	16 GiB	10.16.84.133	BizDev12
ocpdemo-978cs-worker-q94cr	4	16 GiB	10.16.84.152 , 10.16.84.242	BizDev12

Step 1-16

On the *VMs* screen, locate the VM you just created. You can use the **filter** on top of the screen to quickly locate the VM.

Click the **name** of the VM. It will take you to the VM's screen.



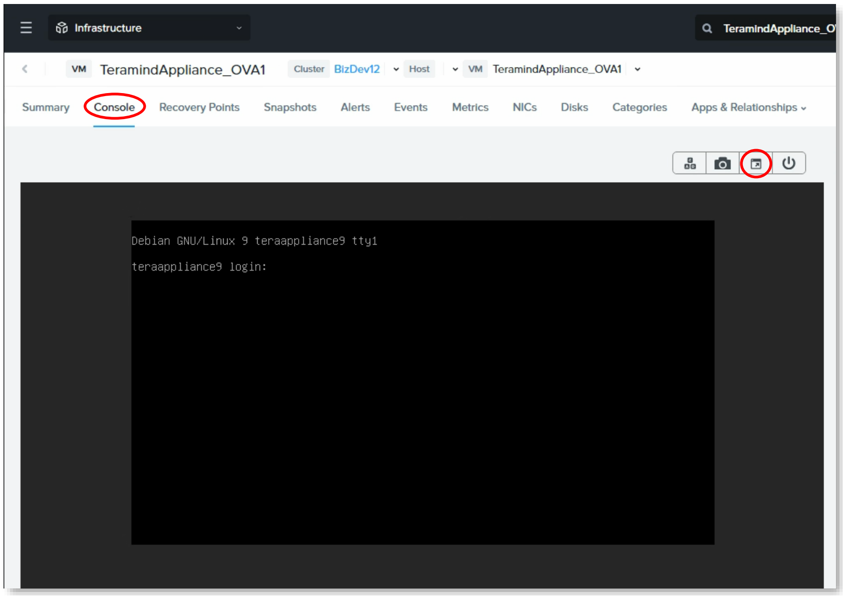
Properties	
Efficiency	-
IP Addresses	-
Description	-
Cluster	BizDev12
Host	-
Host IP	-
vCPU	4
Memory	8 GiB
Memory Overcommit	Disabled
Power State	Off

Step 1-17

On the VM's screen, select the **Summary** tab.

Click the **More** button and then select the **Power On** option from the drop-down menu.

The VM will be powered on and become ready for use in a moment.



```
Debian GNU/Linux 9 teraappliance9 tty1

teraappliance9 login:
```

Step 1-18

On the VM's configuration screen, select the **Console** tab.

The VM will boot up in a few seconds and you will be shown the login prompt.

You will now be able to set up the IP, network and assign machine role(s).

Note: you can click the ***Pop-Up Window*** *icon to open the Console in a separate window to make it easier to work with.*

Proceed to ***Step 2: Setting Up the IP, Network and Machine Role(s)*** to continue.

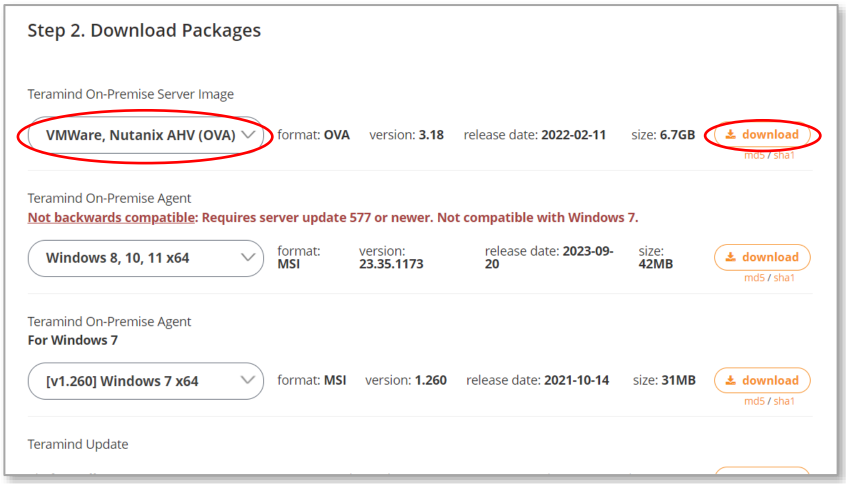
1 Setting Up a Virtual Server with Nutanix AHV (Unpacked OVA Method)

Step 1-1

Go to the **Download** section of the Teramind Self-Hosted Portal.

Scroll down to the *Step 2: Download Packages* section.

Select **VMWare, Nutanix AHV (OVA)** from the *Teramind On-Premise Server Image* drop-down list and click the **download** button to download the OVA file.



Step 2. Download Packages

Teramind On-Premise Server Image

VMWare, Nutanix AHV (OVA) format: OVA version: 3.18 release date: 2022-02-11 size: 6.7GB download md5 / sha1

Teramind On-Premise Agent
Not backwards compatible: Requires server update 577 or newer. Not compatible with Windows 7.

Windows 8, 10, 11 x64 format: MSI version: 23.35.1173 release date: 2023-09-20 size: 42MB download md5 / sha1

Teramind On-Premise Agent
For Windows 7

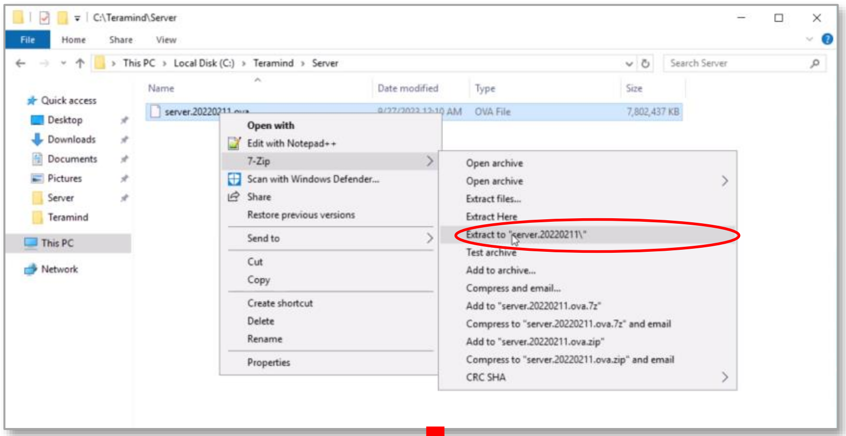
[v1.260] Windows 7 x64 format: MSI version: 1.260 release date: 2021-10-14 size: 31MB download md5 / sha1

Teramind Update

Step 1-2

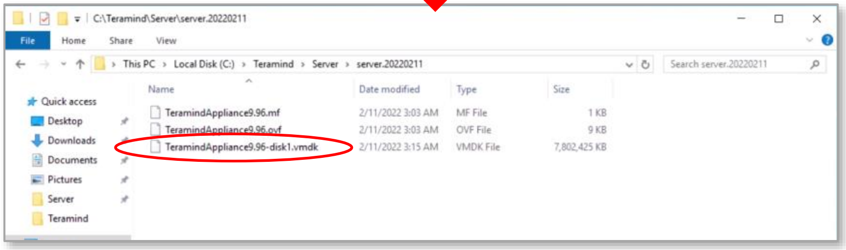
The OVA file is a compressed archive. You will need to **extract** the file using a utility such as 7-Zip.

The extracted OVA file should contain several files. You will need to use the file with a **`.vmdk`** extension in Step 1-5.



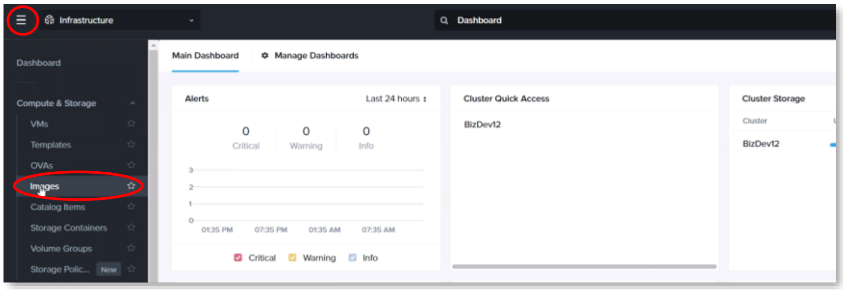
C:\Teramind\Server

Name	Date modified	Type	Size
server.20220211.ova	9/27/2022 12:10 AM	OVA File	7,802,437 KB



C:\Teramind\Server\server.20220211

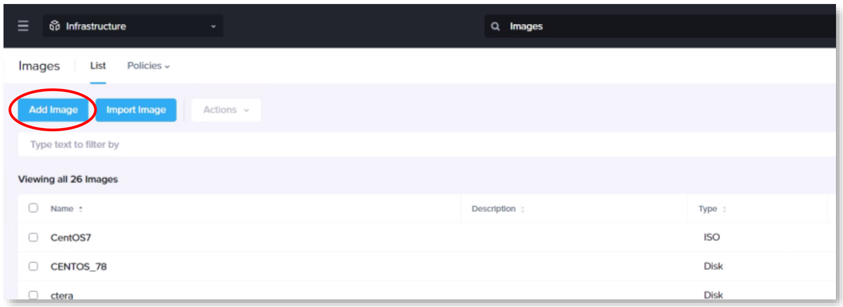
Name	Date modified	Type	Size
TeramindAppliance9.96.mf	2/11/2022 3:03 AM	MF File	1 KB
TeramindAppliance9.96.ovf	2/11/2022 3:03 AM	OVF File	9 KB
TeramindAppliance9.96-disk1.vmdk	2/11/2022 3:15 AM	VMDK File	7,802,425 KB



Step 1-3

Open your *Prism* dashboard, and click the **Main Menu** icon from the top-left corner.

Select **Images**.



Viewing all 26 Images

Name	Description	Type
CentOS7		ISO
CENTOS_78		Disk
ctera		Disk

Step 1-4

Click the **Add Image** button located near the top-left corner.

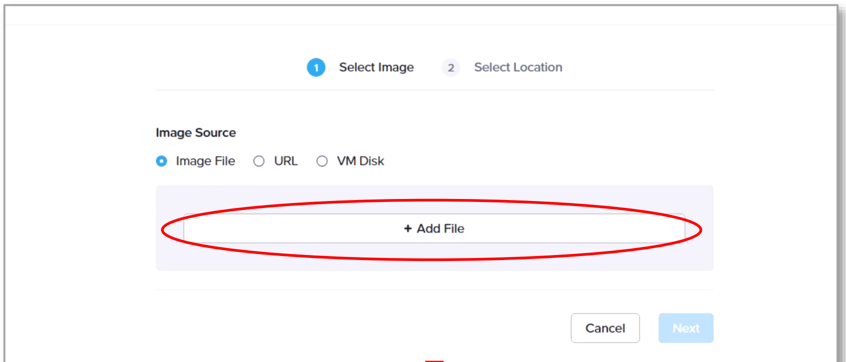
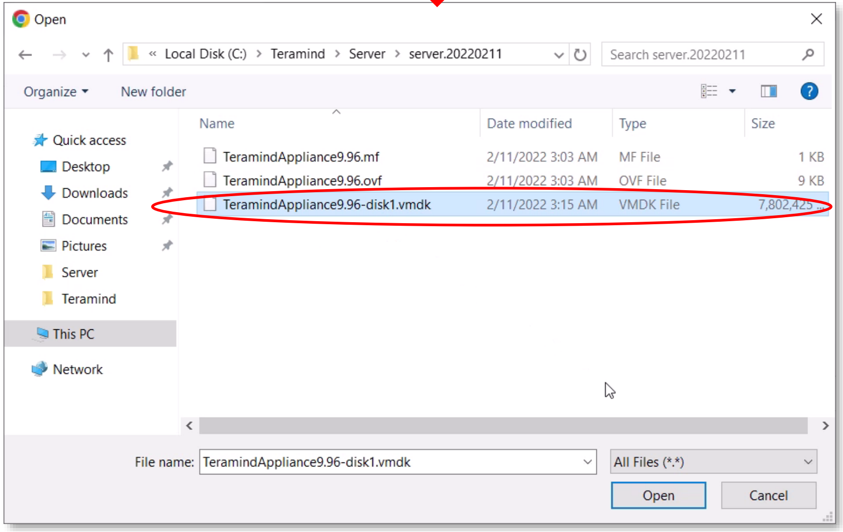


Image Source: ● Image File ○ URL ○ VM Disk



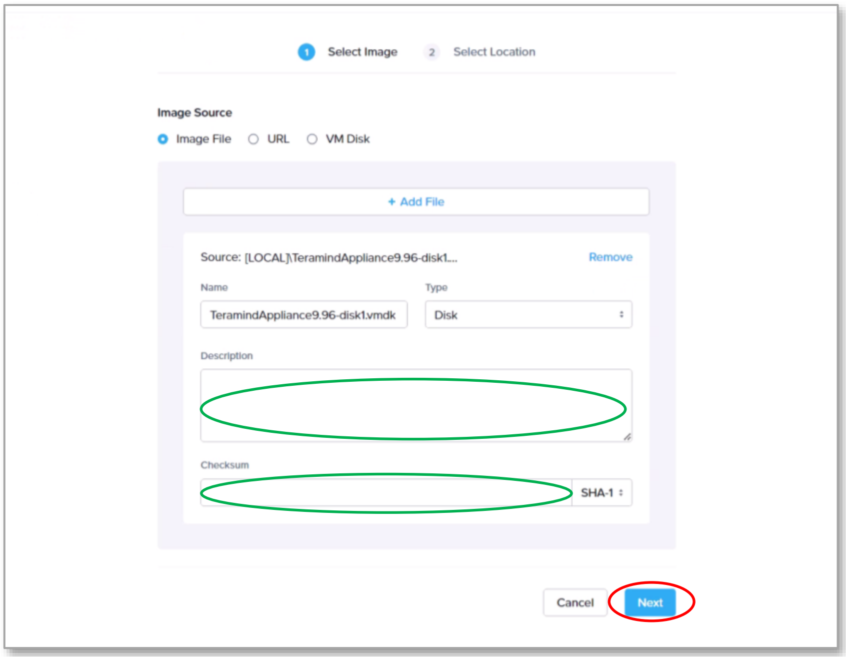
Name	Date modified	Type	Size
TeramindAppliance9.96.mf	2/11/2022 3:03 AM	MF File	1 KB
TeramindAppliance9.96.ovf	2/11/2022 3:03 AM	OVF File	9 KB
TeramindAppliance9.96-disk1.vmdk	2/11/2022 3:15 AM	VMDK File	7,802,425 ...

File name: TeramindAppliance9.96-disk1.vmdk

Step 1-5

Click the **Add File** button. A file *Open* dialogue box will pop up.

Select the **.vmdk** file that you extracted from the OVA image in Step 1-2.



1 Select Image 2 Select Location

Image Source

● Image File ○ URL ○ VM Disk

+ Add File

Source: [LOCAL]\TeramindAppliance9.96-disk1... Remove

Name: TeramindAppliance9.96-disk1.vmdk

Type: Disk

Description

Checksum

SHA-1

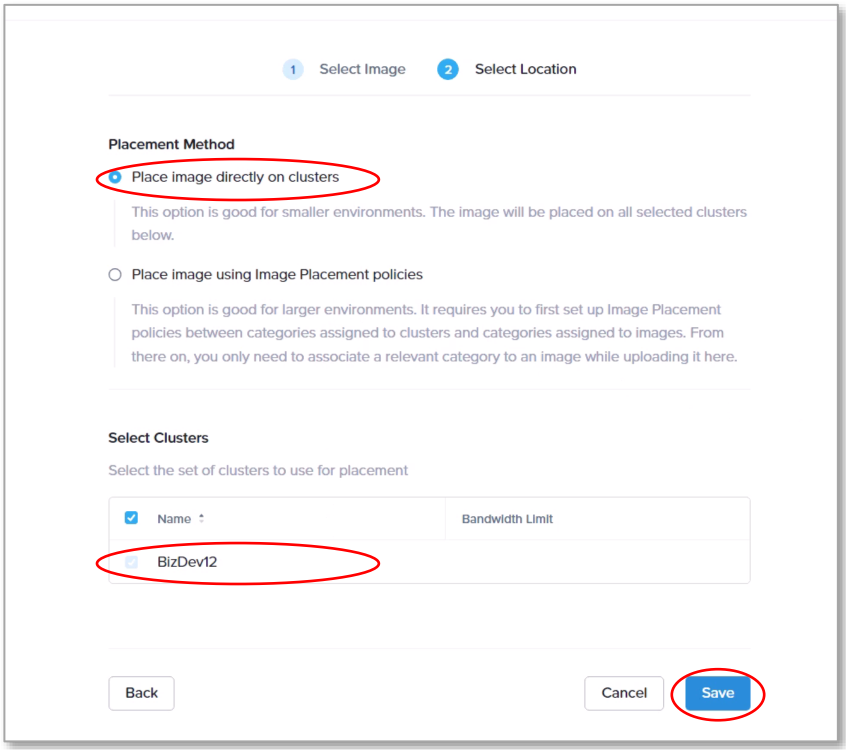
Cancel Next

Step 1-6

You can optionally add a **Description** and **Checksum**. However, in this tutorial, we do not need to use them.

Note: you can find the checksum for the OVA on the *Self-Hosted Portal* under the **download** button, see Step 1-1).

Click the **Next** button to continue to the next step.



1 Select Image 2 Select Location

Placement Method

● Place image directly on clusters

This option is good for smaller environments. The image will be placed on all selected clusters below.

○ Place image using Image Placement policies

This option is good for larger environments. It requires you to first set up Image Placement policies between categories assigned to clusters and categories assigned to images. From there on, you only need to associate a relevant category to an image while uploading it here.

Select Clusters

Select the set of clusters to use for placement

☑ Name	Bandwidth Limit
☑ BizDev12	

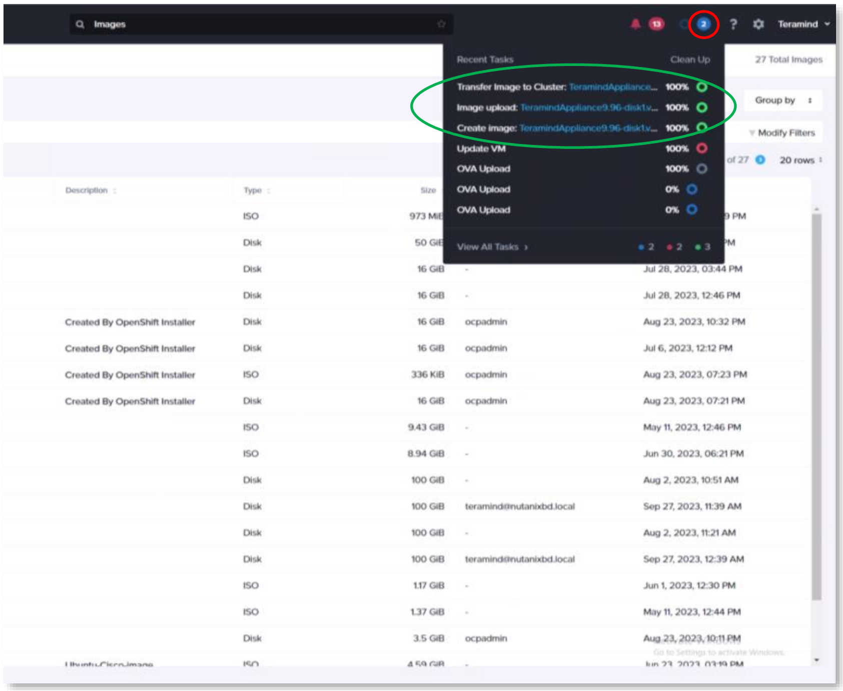
Back Cancel Save

Step 1-7

Select the **Place image directly on clusters** option under the *Placement Method* section.

If you have multiple clusters, you can select them under the *Select Clusters* section. In this tutorial, we have only one cluster, **BizDev12** and it's selected by default.

Click the **Save** button. The image will be saved and you will be taken back to the *Images* screen.



Recent Tasks — Clean Up

Transfer Image to Cluster: TeramindAppliance...	100%	○
Image upload: TeramindAppliance9.96-disk1.v...	100%	○
Create image: TeramindAppliance9.96-disk1.v...	100%	○
Update VM	100%	○
OVA Upload	100%	○
OVA Upload	0%	○
OVA Upload	0%	○

View All Tasks › ● 2 ● 2 ● 3

27 Total Images

Description	Type	Size		
	ISO	973 MiB		9 PM
	Disk	50 GiB		PM
	Disk	16 GiB	-	Jul 28, 2023, 03:44 PM
	Disk	16 GiB	-	Jul 28, 2023, 12:46 PM
Created By OpenShift Installer	Disk	16 GiB	ocpadmin	Aug 23, 2023, 10:32 PM
Created By OpenShift Installer	Disk	16 GiB	ocpadmin	Jul 6, 2023, 12:12 PM
Created By OpenShift Installer	ISO	336 KiB	ocpadmin	Aug 23, 2023, 07:23 PM
Created By OpenShift Installer	Disk	16 GiB	ocpadmin	Aug 23, 2023, 07:21 PM
	ISO	9.43 GiB	-	May 11, 2023, 12:46 PM
	ISO	8.94 GiB	-	Jun 30, 2023, 06:21 PM
	Disk	100 GiB	-	Aug 2, 2023, 10:51 AM
	Disk	100 GiB	teramind@nutanixbd.local	Sep 27, 2023, 11:39 AM
	Disk	100 GiB	-	Aug 2, 2023, 11:21 AM
	Disk	100 GiB	teramind@nutanixbd.local	Sep 27, 2023, 12:39 AM
	ISO	1.17 GiB	-	Jun 1, 2023, 12:30 PM
	ISO	1.37 GiB	-	May 11, 2023, 12:44 PM
	Disk	3.5 GiB	ocpadmin	Aug 23, 2023, 10:11 PM
Ubuntu-Cisco-image	ISO	4.59 GiB	-	Jun 23, 2023, 03:19 PM

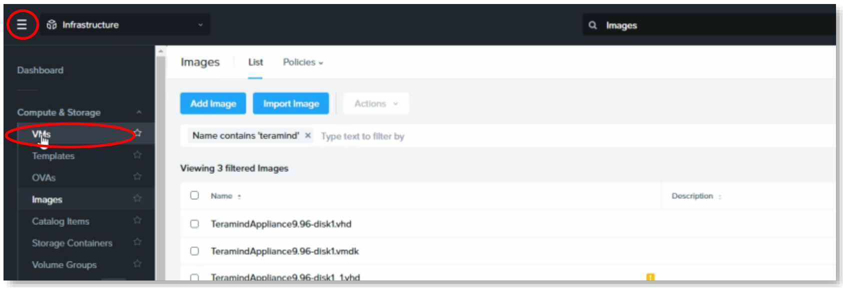
Step 1-8

When you create the image, the system will perform three tasks: **Create image**, **Image upload** and finally, **Transfer Image to Cluster**.

Depending on your network speed, it might take a while complete all three tasks.

You will be able to see the status of these tasks by clicking the **Recent Tasks** icon (the icon is located near the top-right corner, showing a number inside a blue circle)

When the image tasks are finished, you will be able to use the image with your VM.



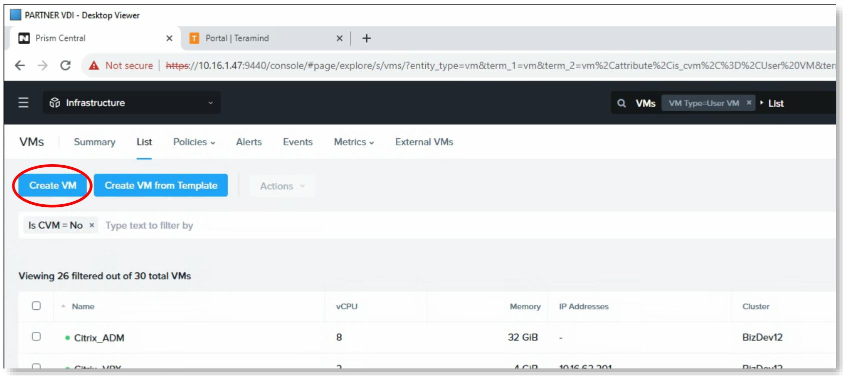
Viewing 3 filtered Images

Name	Description
TeramindAppliance9.96-disk1.vhd	
TeramindAppliance9.96-disk1.vmdk	
TeramindAppliance9.96-disk1_1.vhd	

Step 1-9

Click the **Main Menu** icon from the top-left corner.

Select **VMs**.



PARTNER VDI - Desktop Viewer

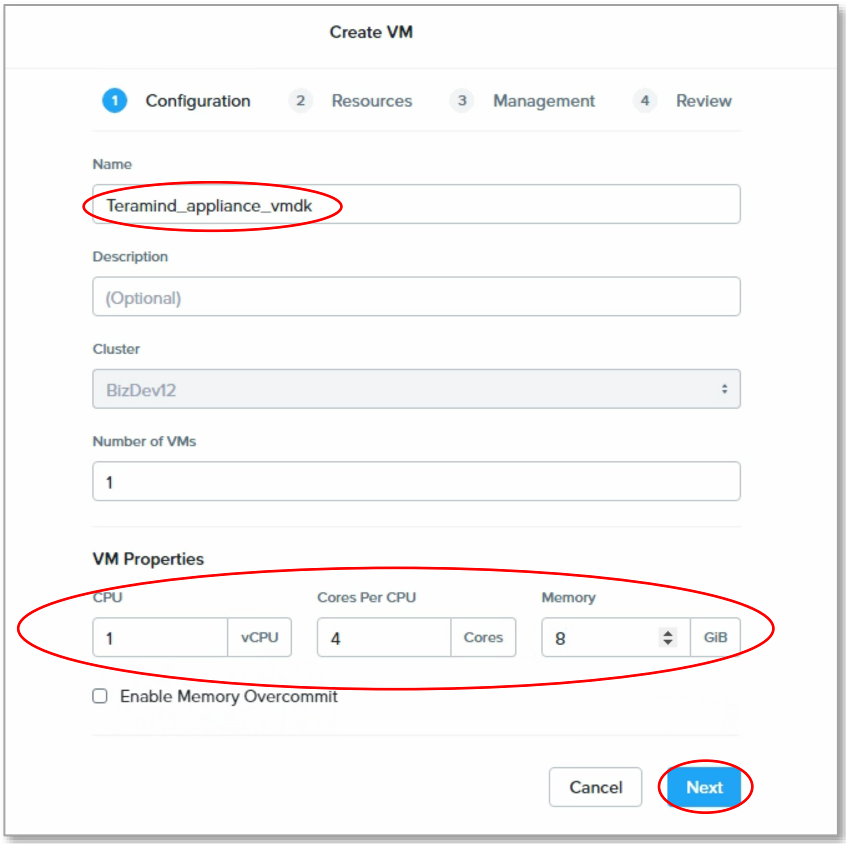
https://10.16.1.47:9440/console/#page/explore/s/vms/?entity_type=vm&term_1=vm&term_2=vm%2Cattribute%2Cis_cvm%2C%3D%2CUser%20VM&ter

Viewing 26 filtered out of 30 total VMs

Name	vCPU	Memory	IP Addresses	Cluster
Citrix_ADM	8	32 GiB	-	BizDev12
Citrix_VPX	2	4 GiB	10.16.62.201	BizDev12

Step 1-10

Click the **Create VM** button located near the top-left corner.



Create VM

1 Configuration 2 Resources 3 Management 4 Review

Name: Teramind_appliance_vmdk

Description: (Optional)

Cluster: BizDev12

Number of VMs: 1

VM Properties

CPU: 1 vCPU

Cores Per CPU: 4 Cores

Memory: 8 GiB

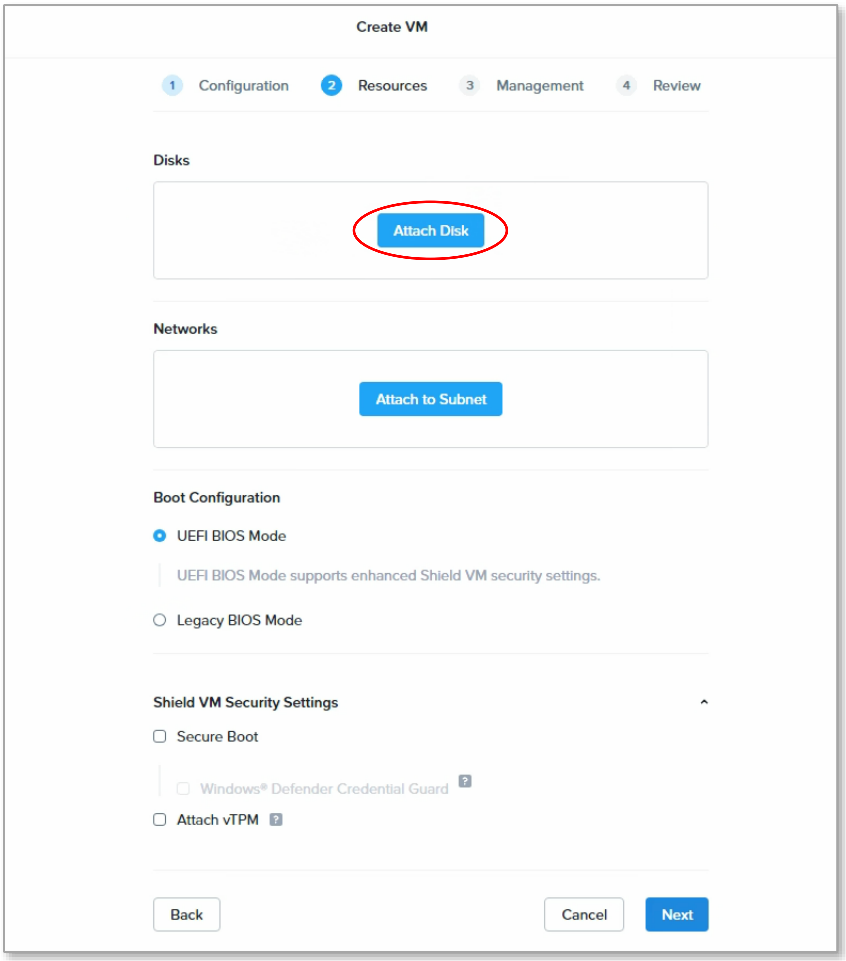
□ Enable Memory Overcommit

Step 1-11

On the first step, *Configuration*, enter a **Name** for your VM.

Adjust the **CPU**, **Cores Per CPU**, and **Memory** under the *VM Properties* section according to your needs. You can use the Primary Server Requirements section to get an idea of how much CPU/memory you might need.

Click the **Next** button to continue to the next step.



● UEFI BIOS Mode

UEFI BIOS Mode supports enhanced Shield VM security settings.

○ Legacy BIOS Mode

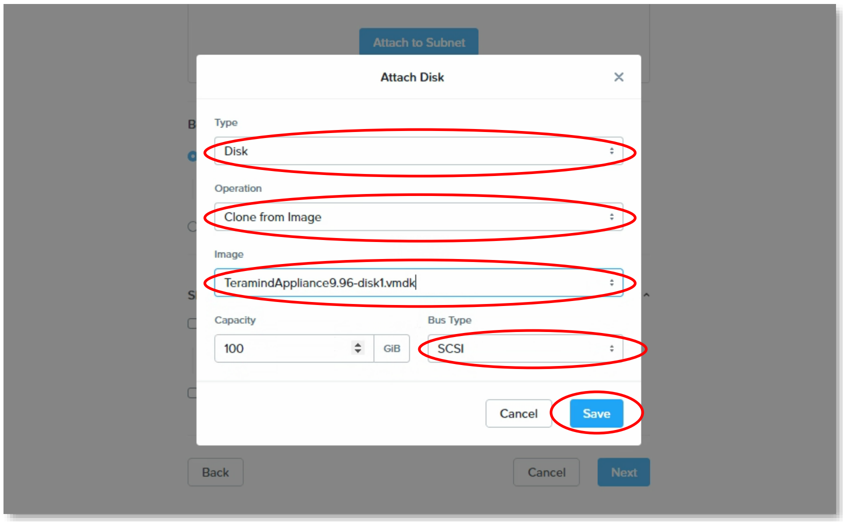
□ Secure Boot

□ Windows® Defender Credential Guard

□ Attach vTPM

Step 1-12

On the second step, *Resources*, click the **Attach Disk** button. A pop-up window will open.



Type: Disk

Operation: Clone from Image

Image: TeramindAppliance9.96-disk1.vmdk

Capacity: 100 GiB

Bus Type: SCSI

Step 1-13

Select **Disk** from the *Type* drop-down list.

Select **Clone from Image** from the *Operation* drop-down list.

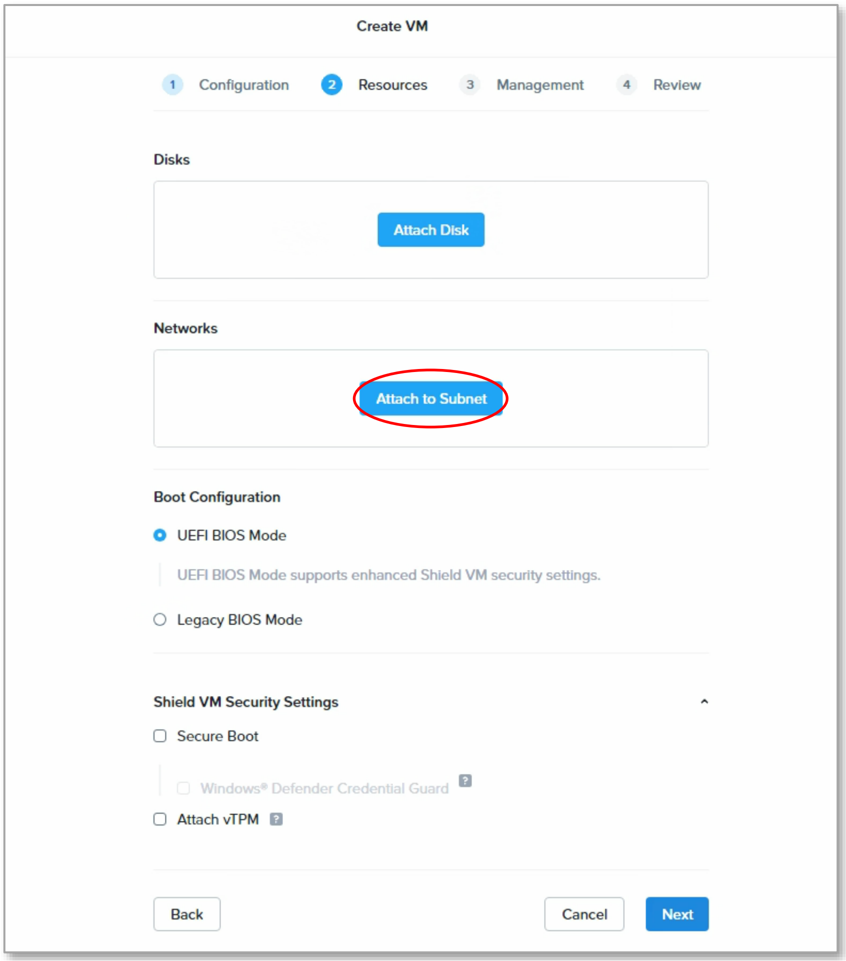
Select the **.vmdk** image you previously created from the *Image* drop-down list.

Make sure **SCSI** is selected from the *Bus Type* drop-down list.

Click the **Save** button.

Step 1-14

Back on the *Resources* step, click the **Attach to Subnet** button. A pop-up window will open.



Create VM

1 Configuration 2 Resources 3 Management 4 Review

Disks

Networks

Boot Configuration

● UEFI BIOS Mode

UEFI BIOS Mode supports enhanced Shield VM security settings.

○ Legacy BIOS Mode

Shield VM Security Settings

□ Secure Boot

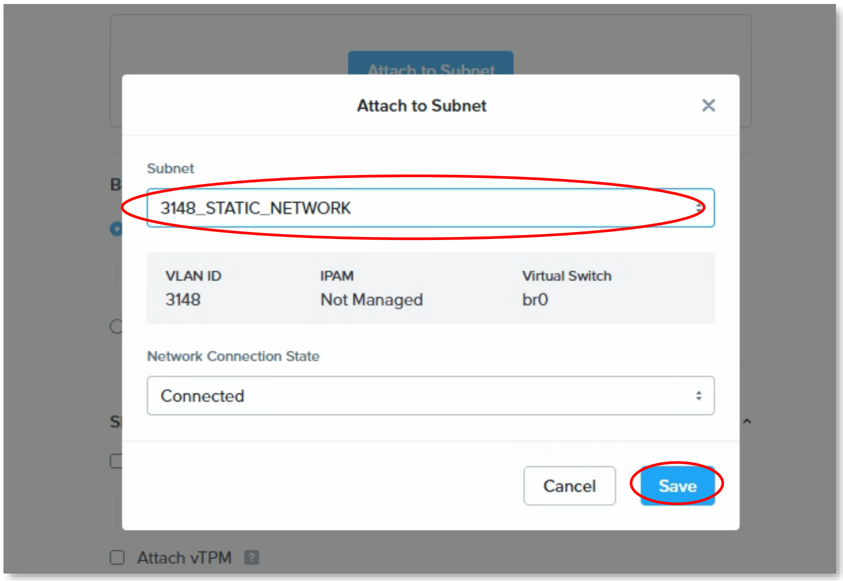
□ Windows® Defender Credential Guard

□ Attach vTPM

Step 1-15

Select an appropriate network from the *Subnet* drop-down list.

Click the **Save** button.

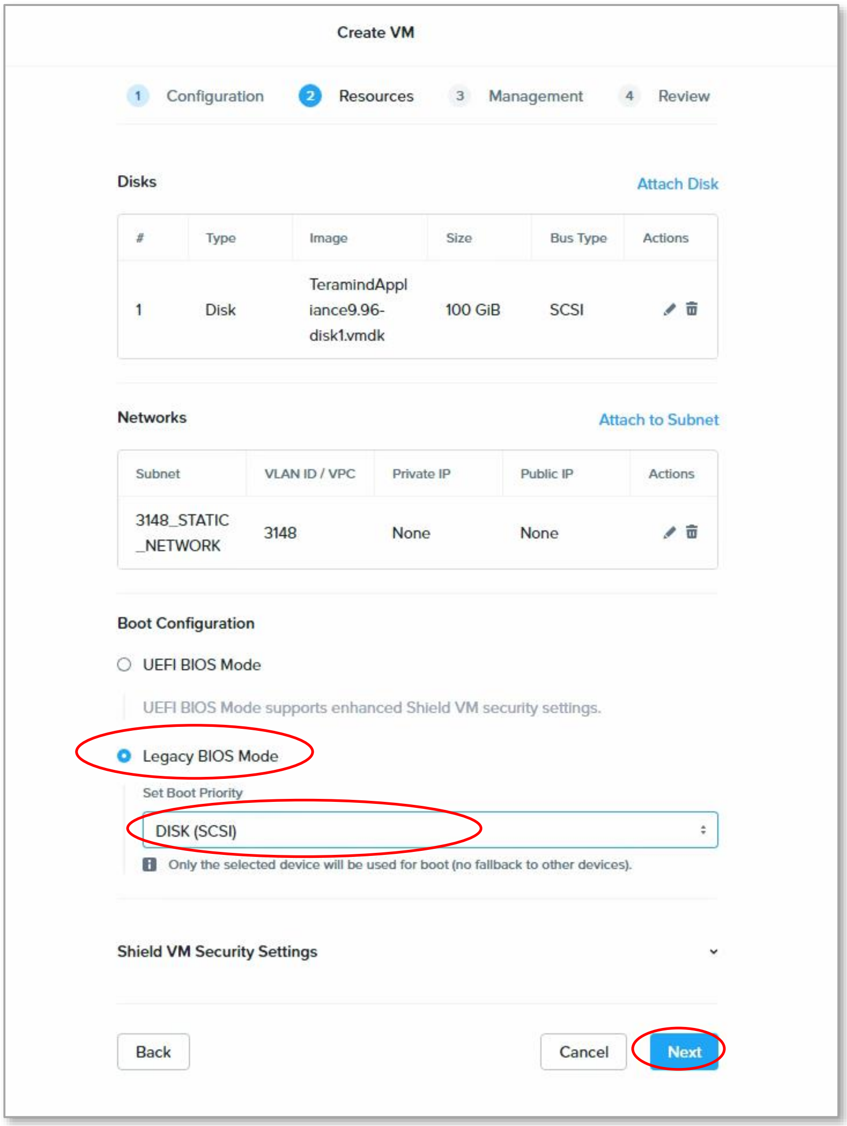


Attach to Subnet

Subnet: 3148_STATIC_NETWORK

VLAN ID	IPAM	Virtual Switch
3148	Not Managed	br0

Network Connection State: Connected



Create VM

1 Configuration 2 Resources 3 Management 4 Review

Disks

Attach Disk

#	Type	Image	Size	Bus Type	Actions
1	Disk	TeramindAppliance9.96-disk1.vmdk	100 GiB	SCSI	

Networks

Attach to Subnet

Subnet	VLAN ID / VPC	Private IP	Public IP	Actions
3148_STATIC_NETWORK	3148	None	None	

Boot Configuration

○ UEFI BIOS Mode

UEFI BIOS Mode supports enhanced Shield VM security settings.

● Legacy BIOS Mode

Set Boot Priority

DISK (SCSI)

Only the selected device will be used for boot (no fallback to other devices).

Shield VM Security Settings

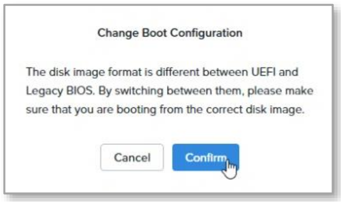
Step 1-16

Back on the *Resources* step, select the **Legacy BIOS Mode** option under the *Boot Configuration* section.

Select **DISK (SCSI)** from the *Set Boot Priority* drop-down list.

Click the **Next** button to go to the next step.

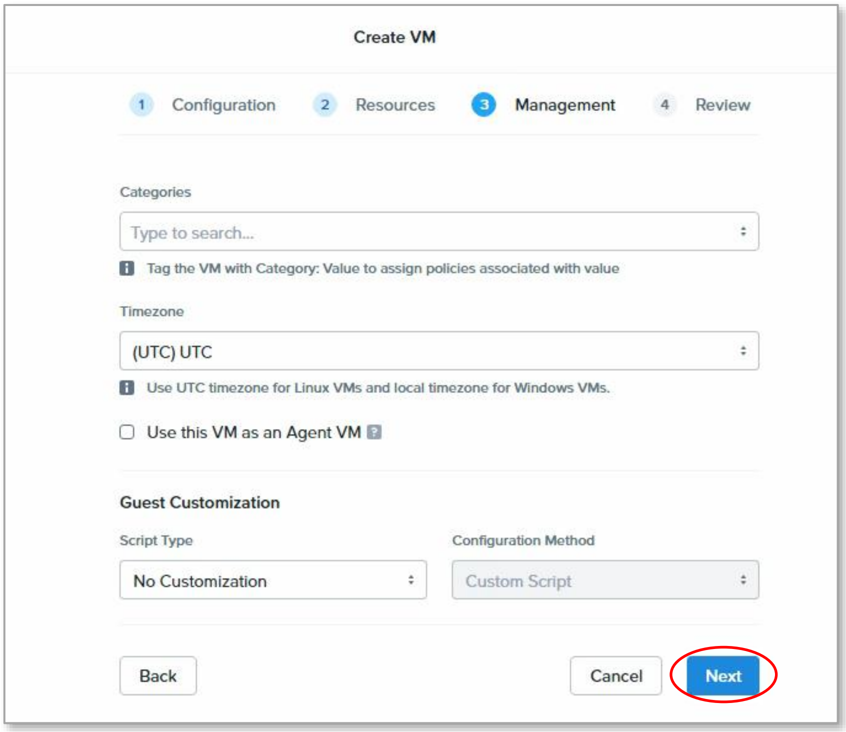
Note: you might see a warning when you change the BIOS mode:



Change Boot Configuration

The disk image format is different between UEFI and Legacy BIOS. By switching between them, please make sure that you are booting from the correct disk image.

*If you see such a warning, press the **Confirm** button on the warning dialogue box to confirm the change.*



Categories: Type to search...

Tag the VM with Category: Value to assign policies associated with value

Timezone: (UTC) UTC

Use UTC timezone for Linux VMs and local timezone for Windows VMs.

□ Use this VM as an Agent VM

Guest Customization

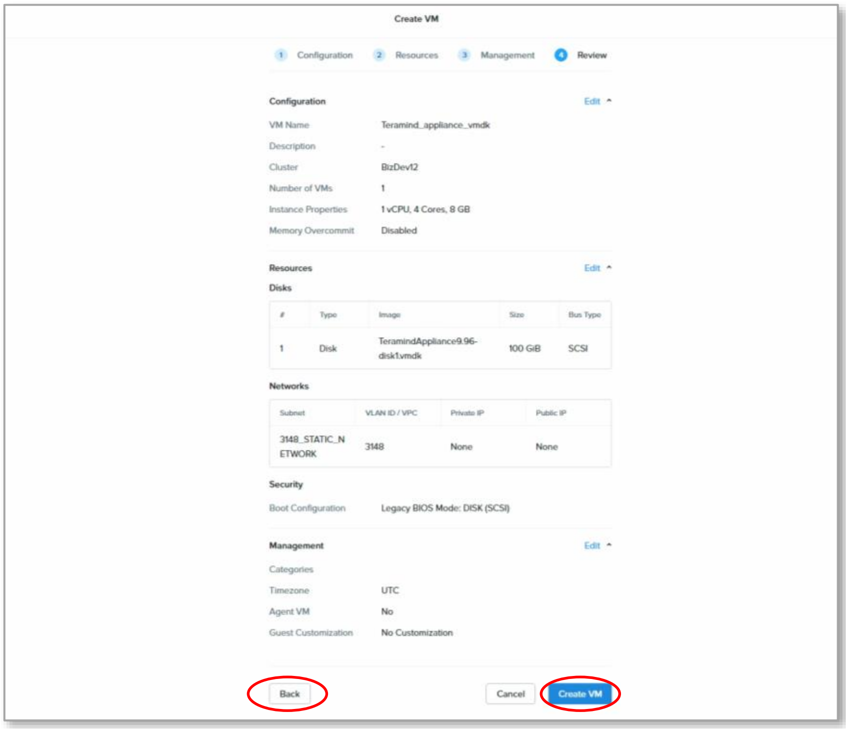
Script Type: No Customization

Configuration Method: Custom Script

Step 1-17

On the *Management* step, you can optionally configure the *Categories*, *Timezone*, and *Guest Customization*. However, in this tutorial, we will keep their default values.

Click the **Next** button to go to the next step.



Configuration

VM Name	Teramind_appliance_vmdk
Description	-
Cluster	BizDev12
Number of VMs	1
Instance Properties	1 vCPU, 4 Cores, 8 GB
Memory Overcommit	Disabled

Resources

Disks

#	Type	Image	Size	Bus Type
1	Disk	TeramindAppliance9.96-disk1.vmdk	100 GiB	SCSI

Networks

Subnet	VLAN ID / VPC	Private IP	Public IP
3148_STATIC_NETWORK	3148	None	None

Security

Boot Configuration	Legacy BIOS Mode: DISK (SCSI)

Management

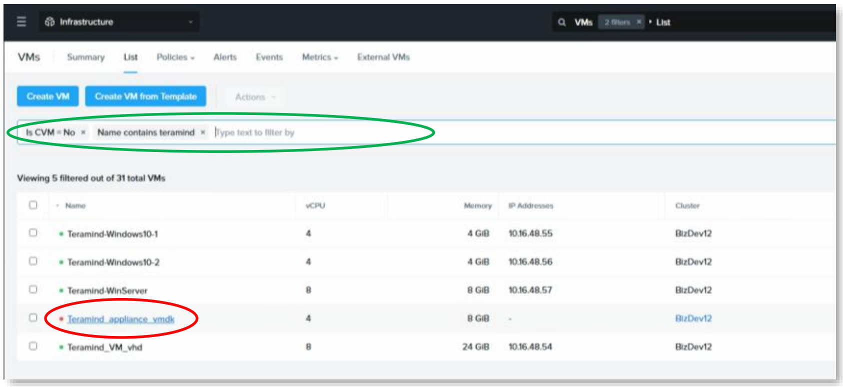
Categories	
Timezone	UTC
Agent VM	No
Guest Customization	No Customization

Step 1-18

On the *Review* step, verify all the settings are correct.

If needed, you can press the **Back** button to go back and make any adjustments.

Otherwise, click the **Create VM** button. Your VM will be ready within a few seconds and you will be taken back to the *VMs* screen.



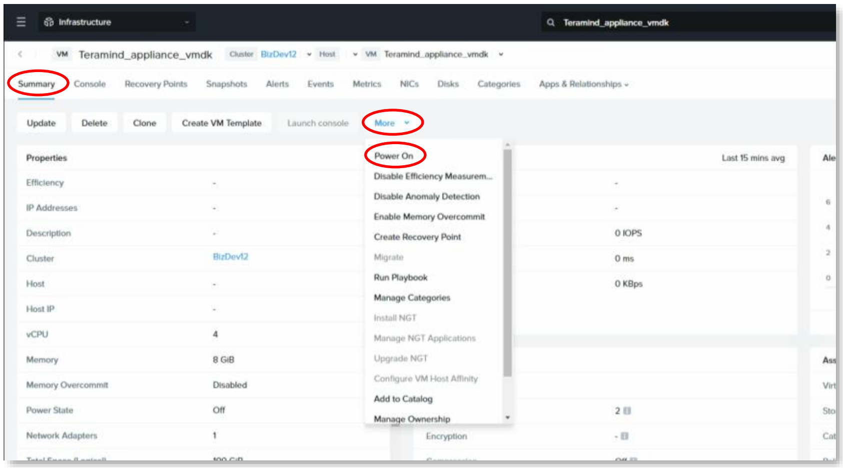
Viewing 5 filtered out of 31 total VMs

Name	vCPU	Memory	IP Addresses	Cluster
Teramind-Windows10-1	4	4 GiB	10.16.48.55	BizDev12
Teramind-Windows10-2	4	4 GiB	10.16.48.56	BizDev12
Teramind-WinServer	8	8 GiB	10.16.48.57	BizDev12
Teramind_appliance_vmdk	4	8 GiB	-	BizDev12
Teramind_VM_vhd	8	24 GiB	10.16.48.54	BizDev12

Step 1-19

On the *VMs* screen, locate the VM you just created. You can use the **filter** on top of the screen to quickly locate the VM.

Click the **name** of the VM. It will take you to the VM's screen.

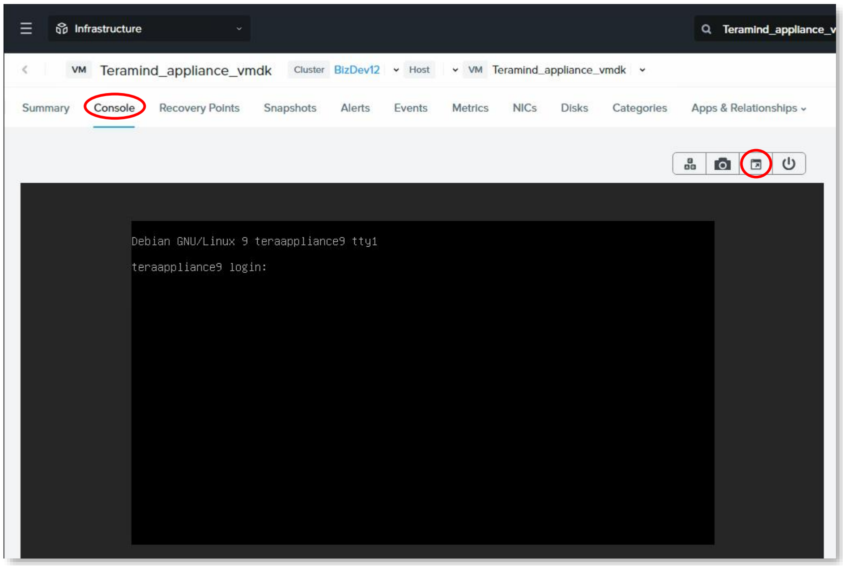


Properties	
Efficiency	-
IP Addresses	-
Description	-
Cluster	BizDev12
Host	-
Host IP	-
vCPU	4
Memory	8 GiB
Memory Overcommit	Disabled
Power State	Off
Network Adapters	1

Step 1-20

On the VM's screen, select the **Summary** tab.

Click the **More** button and then select the **Power On** option from the drop-down menu. The VM will be powered on and become ready for use within a few seconds.



```
Debian GNU/Linux 9 teraappliance9 tty1

teraappliance9 login:
```

Step 1-21

On the VM's configuration screen, select the **Console** tab.

The VM will boot up in a few seconds and you will be shown the login prompt.

You will now be able to set up the IP, network and assign machine role(s).

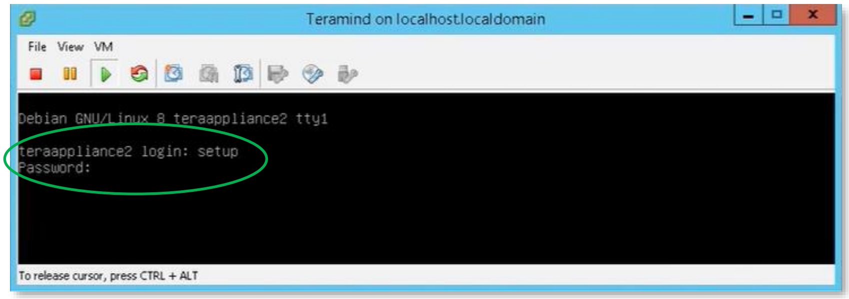
*Note: you can click the **Pop-Up Window** ⧉ icon to open the Console in a separate window to make it easier to work with.*

Proceed to ***Step 2: Setting Up the IP, Network and Machine Role(s)*** to continue.

2 Setting Up the IP, Network and Machine Role(s)

If you have followed all the instructions in **Step** 1 correctly (for your chosen virtualization platform), you should now have a console window open for your VM. We will use this console window to configure IP and other network settings and the machine role.

Notes About the Console Window
The *Console* window on each VM environment may come with a different interface and features. However, the basic functionality is the same. The following commands to set up the Teramind server are the same, no matter which Console/VM environment you are using.


Teramind on localhost.localdomain
File View VM
To release cursor, press CTRL + ALT

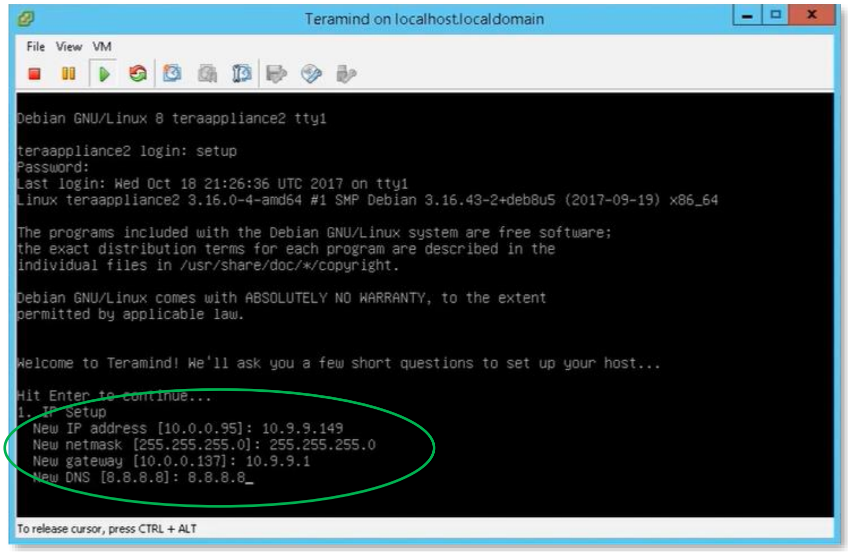
```
Debian GNU/Linux 8 teraappliance2 tty1

teraappliance2 login: setup
Password:
```

Step 2-1

Log in using the following credentials:

- Username: setup
- Password: setup

Press **Enter** to continue.

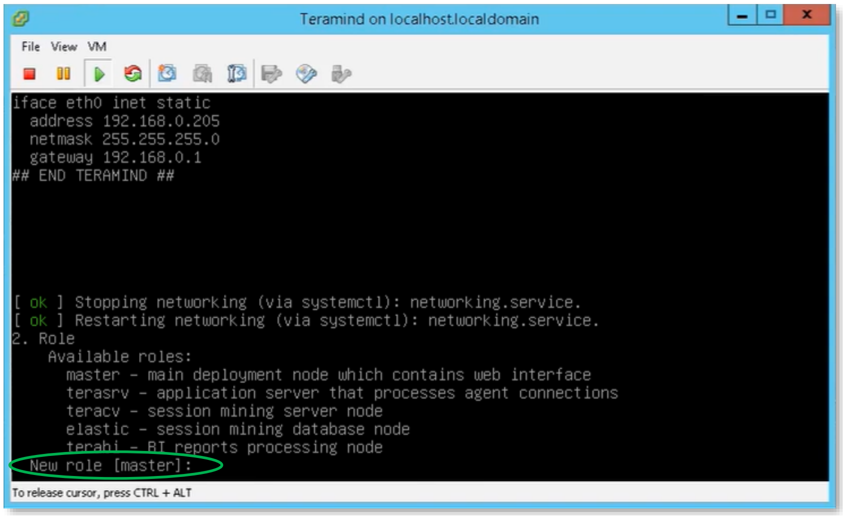

Teramind on localhost.localdomain
File View VM
To release cursor, press CTRL + ALT

```
Debian GNU/Linux 8 teraappliance2 tty1

teraappliance2 login: setup
Password:
Last login: Wed Oct 18 21:26:36 UTC 2017 on tty1
Linux teraappliance2 3.16.0-4-amd64 #1 SMP Debian 3.16.43-2+deb8u5 (2017-09-19) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.


Welcome to Teramind! We'll ask you a few short questions to set up your host...

Hit Enter to continue...
1. IP Setup
  New IP address [10.0.0.95]: 10.9.9.149
  New netmask [255.255.255.0]: 255.255.255.0
  New gateway [10.0.0.137]: 10.9.9.1
  New DNS [8.8.8.8]: 8.8.8.8_
```

Step 2-2

When prompted, fill out the following information:

- IP address
- Netmask
- Default gateway (optional)
- Domain name server (DNS)



```
iface eth0 inet static
  address 192.168.0.205
  netmask 255.255.255.0
  gateway 192.168.0.1
## END TERAMIND ##




[ ok ] Stopping networking (via systemctl): networking.service.
[ ok ] Restarting networking (via systemctl): networking.service.
2. Role
    Available roles:
      master - main deployment node which contains web interface
      terasrv - application server that processes agent connections
      teracv - session mining server node
      elastic - session mining database node
      terabi - BI reports processing node
  New role [master]:
```

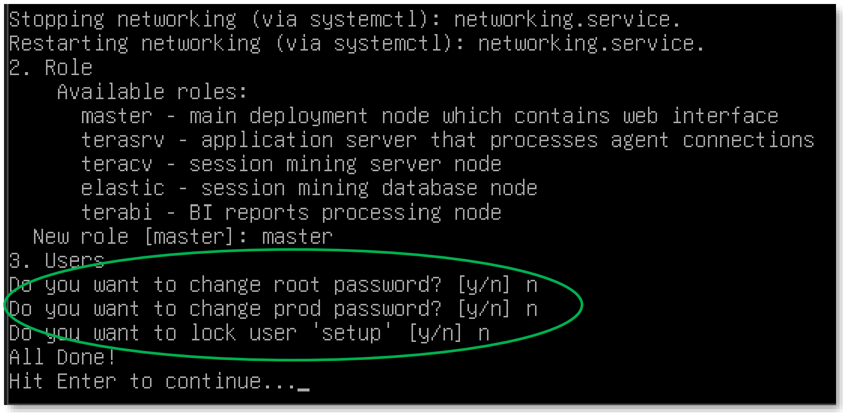
To release cursor, press CTRL + ALT

Step 2-3

Since this is a single-server deployment*, we will leave the default role to master when asked by the *New role [master]:* prompt.

At this stage, we are done with the console commands.

Proceed to ***Step 3: Setting Up the Account and Finishing Deployment*** to continue.



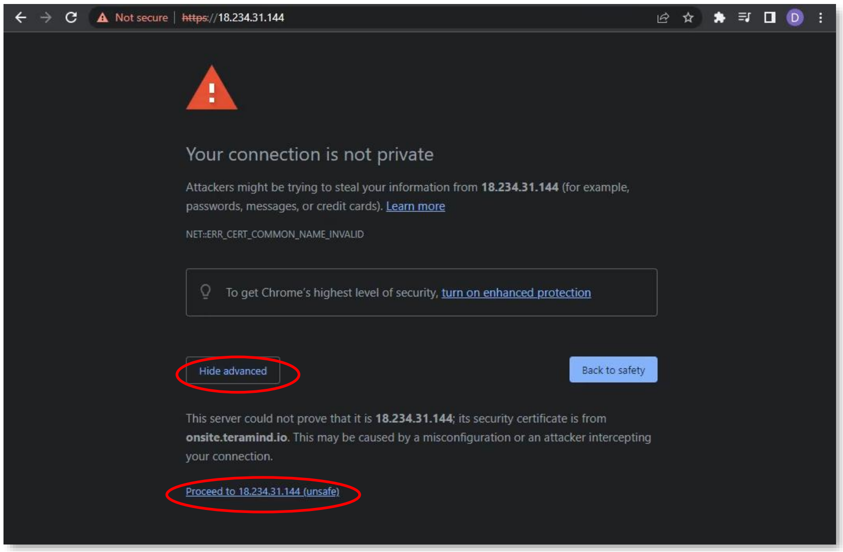
```
Stopping networking (via systemctl): networking.service.
Restarting networking (via systemctl): networking.service.
2. Role
    Available roles:
      master - main deployment node which contains web interface
      terasrv - application server that processes agent connections
      teracv - session mining server node
      elastic - session mining database node
      terabi - BI reports processing node
  New role [master]: master
3. Users
Do you want to change root password? [y/n] n
Do you want to change prod password? [y/n] n
Do you want to lock user 'setup' [y/n] n
All Done!
Hit Enter to continue..._
```

Step 2-4

In some cases, you might be prompted to change the root and prod passwords and to lock the setup user account. If you want to keep the default, press n to the prompt(s). If you do change them, please keep them in a secure place. You will need them for any future changes to your servers.

*Check out this Knowledge Base article for instructions on multi-node deployments: How to set up an on-premise multi-node deployment.

3 Setting Up the Account and Finishing Deployment



Your connection is not private

Attackers might be trying to steal your information from **18.234.31.144** (for example, passwords, messages, or credit cards). Learn more

NET::ERR_CERT_COMMON_NAME_INVALID

To get Chrome's highest level of security, turn on enhanced protection

This server could not prove that it is **18.234.31.144**; its security certificate is from **onsite.teramind.io**. This may be caused by a misconfiguration or an attacker intercepting your connection.

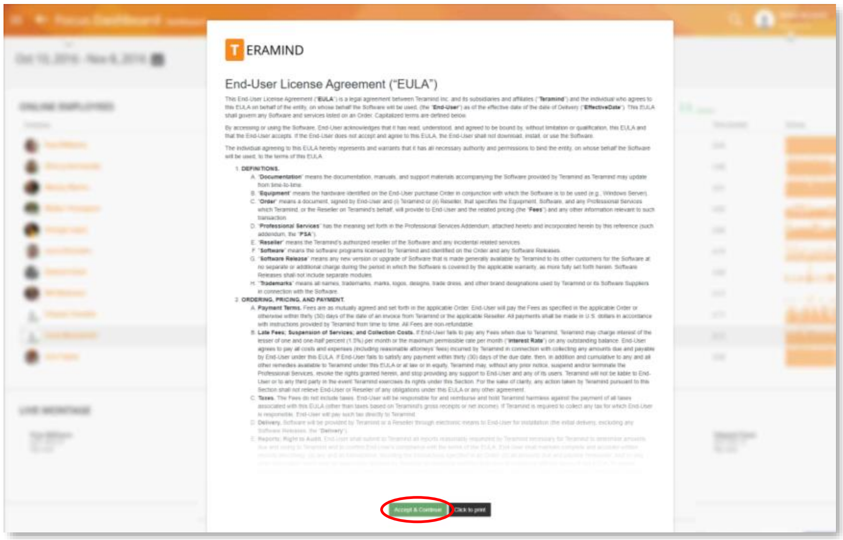
Proceed to 18.234.31.144 (unsafe)

Step 3-1

Open your browser and type in the IP address you used for the Teramind server setup in the previous step (Step 2-2).

You might see a warning message on your browser saying the connection is not private or secure. This is normal. The warning is shown because you haven't assigned any SSL certificate to your server. You can upload your own certificate later from the Teramind Dashboard (for more information, check out the Settings > Security > SSL section of the User Guide).

If you are using Google Chrome, you can click the **Advanced** button on the warning page and then click the **Proceed to…** link to continue. Other browsers have similar options to bypass the warning.



End-User License Agreement ("EULA")

This End-User License Agreement ("**EULA**") is a legal agreement between Teramind Inc. and its subsidiaries and affiliates ("**Teramind**") and the individual who agrees to this EULA on behalf of the entity, on whose behalf the Software will be used, (the "**End-User**") as of the effective date of the date of Delivery ("**EffectiveDate**"). This EULA shall govern any Software and services listed on an Order. Capitalized terms are defined below.

By accessing or using the Software, End-User acknowledges that it has read, understood, and agreed to be bound by, without limitation or qualification, this EULA and that the End-User accepts. If the End-User does not accept and agree to this EULA, the End-User shall not download, install, or use the Software.

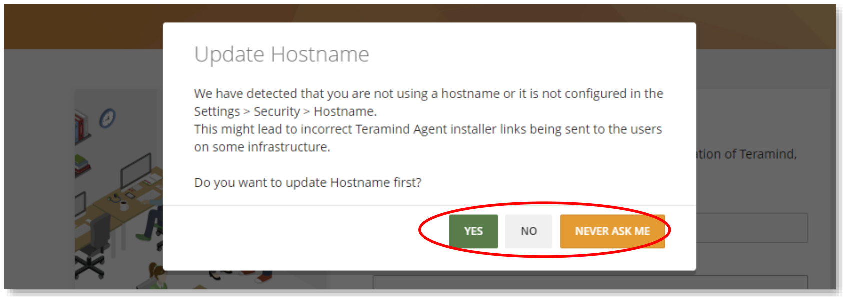
The individual agreeing to this EULA hereby represents and warrants that it has all necessary authority and permissions to bind the entity, on whose behalf the Software will be used, to the terms of this EULA.

1. **DEFINITIONS.**
   - A. "**Documentation**" means the documentation, manuals, and support materials accompanying the Software provided by Teramind as Teramind may update from time-to-time.
   - B. "**Equipment**" means the hardware identified on the End-User purchase Order in conjunction with which the Software is to be used (e.g., Windows Server).
   - C. "**Order**" means a document, signed by End-User and (i) Teramind or (ii) Reseller, that specifies the Equipment, Software, and any Professional Services which Teramind, or the Reseller on Teramind's behalf, will provide to End-User and the related pricing (the "**Fees**") and any other information relevant to such transaction.
   - D. "**Professional Services**" has the meaning set forth in the Professional Services Addendum, attached hereto and incorporated herein by this reference (such addendum, the "**PSA**").
   - E. "**Reseller**" means the Teramind's authorized reseller of the Software and any incidental related services.
   - F. "**Software**" means the software programs licensed by Teramind and identified on the Order and any Software Releases.
   - G. "**Software Release**" means any new version or upgrade of Software that is made generally available by Teramind to its other customers for the Software at no separate or additional charge during the period in which the Software is covered by the applicable warranty, as more fully set forth herein. Software Releases shall not include separate modules.
   - H. "**Trademarks**" means all names, trademarks, marks, logos, designs, trade dress, and other brand designations used by Teramind or its Software Suppliers in connection with the Software.
2. **ORDERING, PRICING, AND PAYMENT.**
   - A. **Payment Terms.** Fees are as mutually agreed and set forth in the applicable Order. End-User will pay the Fees as specified in the applicable Order or otherwise within thirty (30) days of the date of an invoice from Teramind or the applicable Reseller. All payments shall be made in U.S. dollars in accordance with instructions provided by Teramind from time to time. All Fees are non-refundable.
   - B. **Late Fees; Suspension of Services; and Collection Costs.** If End-User fails to pay any Fees when due to Teramind, Teramind may charge interest of the lesser of one and one-half percent (1.5%) per month or the maximum permissible rate per month ("**Interest Rate**") on any outstanding balance. End-User agrees to pay all costs and expenses (including reasonable attorneys' fees) incurred by Teramind in connection with collecting any amounts due and payable by End-User under this EULA. If End-User fails to satisfy any payment within thirty (30) days of the due date, then, in addition and cumulative to any and all other remedies available to Teramind under this EULA or at law or in equity, Teramind may, without any prior notice, suspend and/or terminate the Professional Services, revoke the rights granted herein, and stop providing any support to End-User and any of its users. Teramind will not be liable to End-User or to any third party in the event Teramind exercises its rights under this Section. For the sake of clarity, any action taken by Teramind pursuant to this Section shall not relieve End-User or Reseller of any obligations under this EULA or any other agreement.
   - C. **Taxes.** The Fees do not include taxes. End-User will be responsible for and reimburse and hold Teramind harmless against the payment of all taxes associated with this EULA (other than taxes based on Teramind's gross receipts or net income). If Teramind is required to collect any tax for which End-User is responsible, End-User will pay such tax directly to Teramind.
   - D. **Delivery.** Software will be provided by Teramind or a Reseller through electronic means to End-User for installation (the initial delivery, excluding any Software Releases, the "Delivery").
   - E. **Reports; Right to Audit.** End-User shall submit to Teramind all reports reasonably requested by Teramind necessary for Teramind to determine amounts due and owing to Teramind and to confirm End-User's compliance with the terms of this EULA. End-User shall maintain complete and accurate written records [illegible]

Step 3-2

When you enter the Teramind Dashboard for the first time, you will see the *End-User License Agreement* screen.

Scroll down and click the **Accept & Continue** button.



Update Hostname

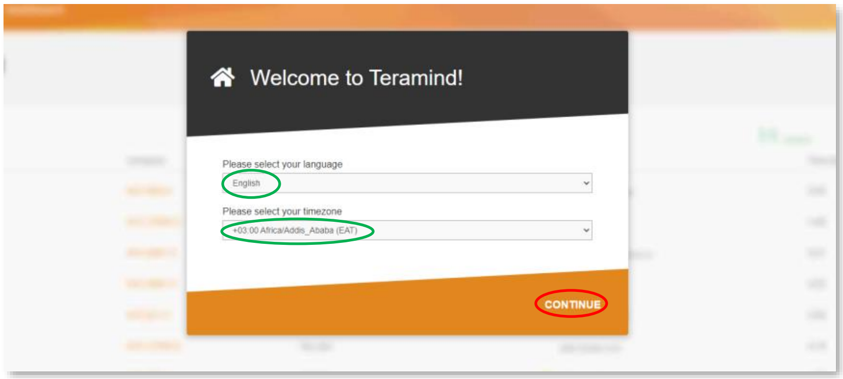
We have detected that you are not using a hostname or it is not configured in the Settings > Security > Hostname.
This might lead to incorrect Teramind Agent installer links being sent to the users on some infrastructure.

Do you want to update Hostname first?

Step 3-3

In some cases, you might be prompted to update your hostname.

Clicking **YES** will let you change your hostname. You can press **NO** to skip this step; you will be able to change it later from the Settings > Security > Host screen. Click the **NEVER ASK ME** button to stop this pop up from appearing in the future.



Welcome to Teramind!

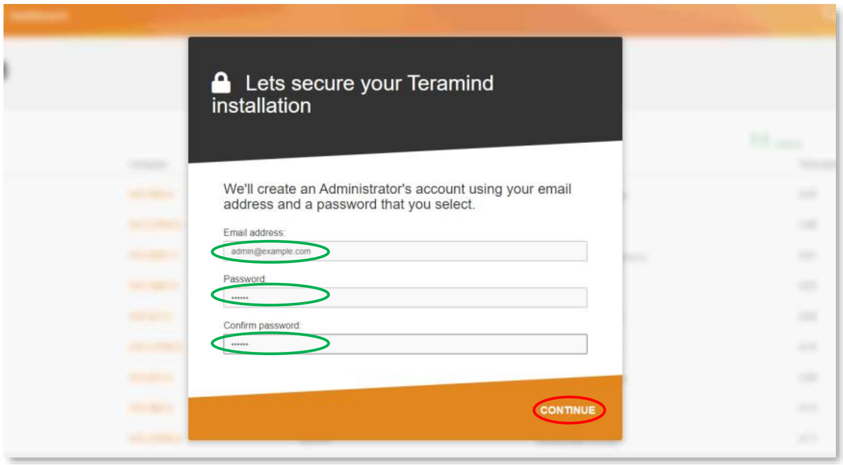
Please select your language: English

Please select your timezone: +03:00 Africa/Addis_Ababa (EAT)

Step 3-4

On the *Welcome to Teramind* screen, select your **language** and **timezone**.

Click **CONTINUE**.



Lets secure your Teramind installation

We'll create an Administrator's account using your email address and a password that you select.

Email address: admin@example.com

Password: ••••••

Confirm password: ••••••

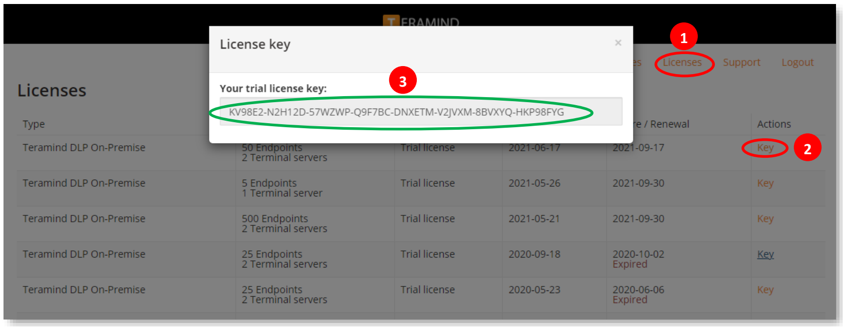
Step 3-5

On the *Lets secure your Teramind installation* screen, enter an **Email address**, specify a **Password** and enter the same password in the **Confirm password** field.

This credential will be used for your admin account.

Click **CONTINUE**.

Step 3-6



License key

Your trial license key:

KV98E2-N2H12D-57WZWP-Q9F7BC-DNXETM-V2JVXM-8BVXYQ-HKP98FYG

Licenses

Type				re / Renewal	Actions
Teramind DLP On-Premise	50 Endpoints 2 Terminal servers	Trial license	2021-06-17	2021-09-17	Key
Teramind DLP On-Premise	5 Endpoints 1 Terminal server	Trial license	2021-05-26	2021-09-30	Key
Teramind DLP On-Premise	500 Endpoints 2 Terminal servers	Trial license	2021-05-21	2021-09-30	Key
Teramind DLP On-Premise	25 Endpoints 2 Terminal servers	Trial license	2020-09-18	2020-10-02 Expired	Key
Teramind DLP On-Premise	25 Endpoints 2 Terminal servers	Trial license	2020-05-23	2020-06-06 Expired	Key

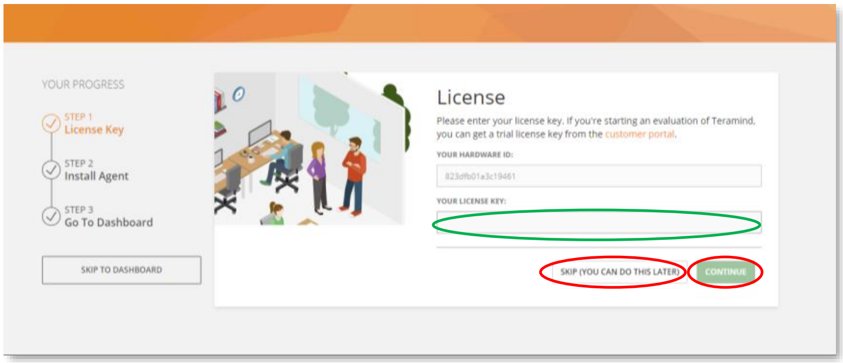
Open a separate browser tab and log into the Self-Hosted Portal at: https://www.teramind.co/portal. Login with the admin email and password.

Click the **Licenses** tab.

From the list of licenses, click the **Key** link under the *Actions* column. A pop-up will display the license key.

Copy the **license key** or write it down.

Step 3-7



License

Please enter your license key. If you're starting an evaluation of Teramind, you can get a trial license key from the customer portal.

YOUR HARDWARE ID: 823dfb01a3c19461

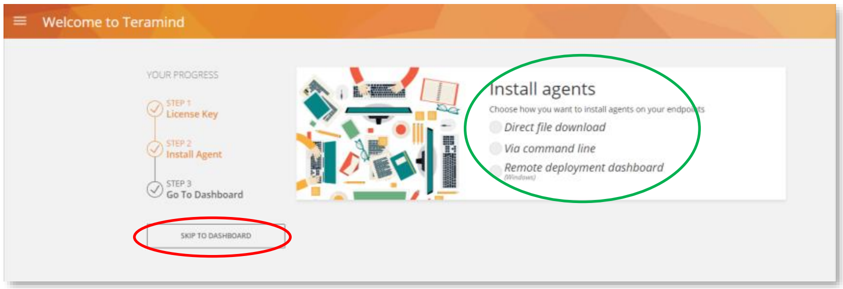
YOUR LICENSE KEY:

Go back to your Teramind Dashboard. Enter/paste the **license key** you copied in the previous step.

Click the **CONTINUE** button.

Note: if you do not want to set up a license at this stage, you can click the ***SKIP (YOU CAN DO THIS LATER)*** *button. You can add a license later from the Dashboard. To learn how to do that, please check out this article on our Knowledge Base.*

Step 3-8



Install agents

Choose how you want to install agents on your endpoints

○ *Direct file download*

○ *Via command line*

○ *Remote deployment dashboard* (Windows)

At this stage, you can either **Install agents** or **SKIP TO THE DASHBOARD**. If you skip to the dashboard, you won't see any data but you will be able to navigate the interface.

Proceed to ***Step 4: Installing the Teramind Agent*** to learn more about Agent installation.

If you have added a recording disk to your Teramind VM then there are some additional steps needed to finish provisioning the recording disk. Please refer to this link for the remaining steps to provision the recording disk.

If you instead are using NFS storage, then please refer to this link for the steps to mount an NFS share.

Note:
The commands in the above two links will require logging into the Teramind server VM as either the ‘prod’ or ‘root’ user accounts. If you do not already have these credentials, please reach out to Teramind’s support team to obtain the On-Premise credentials

At this stage, you are done deploying your Teramind Server. If you want to use the OCR feature, follow the instructions under the OCR Deployment section below.

4 Installing the Teramind Agent

Teramind Agent can be installed both locally and remotely. Please check out the How to download and install the Teramind Agent article on our Knowledge Base or consult the Teramind User Guide for instructions on how to download and install the Agent.

Firewall & Proxy Considerations

In most cases, you should not have to change any settings to get Teramind to work. By default, the Teramind Agents communicate with the Teramind server on two ports: 443, and 10000.

The Teramind management interface is entirely web-driven and runs over HTTPS (port 443). This means that most proxies will allow the traffic through, provided you properly installed your SSL certificates.

For live and recorded screen playback, as well as live session listing, Teramind uses WebSocket. Although the WebSocket operates as HTTPS over port 443, some older proxies may not recognize this protocol. In either case, if you are experiencing trouble accessing your Teramind dashboard, try to disable your proxy temporarily to isolate the cause.

Also note that, if the audio recording is enabled, Teramind Agent will connect to the server on a random UDP port in the range 1000-65535 to send the audio recordings. Make sure UDP ports in that range are enabled and open from the endpoint to the server.

> If you encounter any issues with your firewall or proxy, check out this troubleshooting article for help: Firewall and proxy issues.
>
> You can also check the On-Premise Data Sheet for more information about required ports.

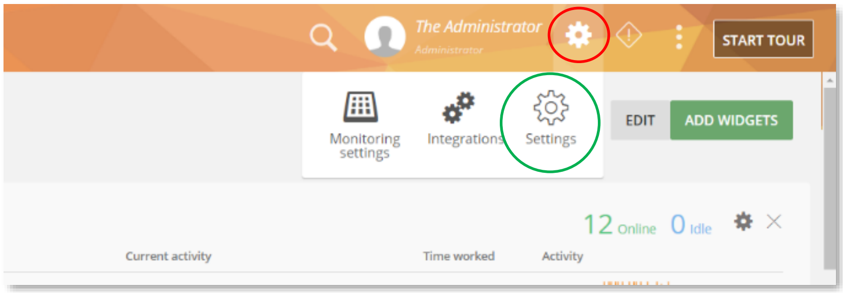
Antivirus Considerations

Teramind Agent and its drivers come digitally signed with an extended validation certificate. We've made every effort to coordinate our signature with the major antivirus vendors, and as a result, Teramind should work normally with the vast majority of antivirus software.

> If you encounter any issues, check out the Antivirus Configuration Guide for help.

Additional Configurations

Once you have installed Teramind successfully, you can configure other aspects of the server, agent and other settings entirely from the web-based dashboard.



Once you have installed To access the configuration settings, hover over the **Cog icon** on the top-right corner of the dashboard, and click **Settings.**

The *Settings* screen will open.

Here are a few key settings you should configure. For additional information, check out the Settings section on the Teramind User Guide.

Changing the License Key

If for any reason, you want to change the license key (for example, when upgrading from a trial to a paid account), you can do that from the **Settings** > **About** tab.

Check out this article for help: How to change the license key (On-Premise / Private Cloud Deployment).

Updating the Server

Teramind regularly releases server updates for the On-Premise deployment on our Self-Hosted Portal and the virtual machine images may not always contain the latest server updates. These updates may contain bug fixes, security patches and new features. To keep your deployment up-to-date, we recommend that you update your server regularly. To update your server, download the latest server image from the Self-Hosted Portal at www.teramind.co/portal. Under the Download > Teramind Update section. Download the platform update file (with a TMU extension) by clicking the download icon.

Once you have downloaded the file, you can upload it to the dashboard under Settings > About tab.

Check out this article for help: How to update the Teramind Server and BI Classification (On-Premise deployment).

Setting Up the Active Directory / LDAP Integration

Though not mandatory, Teramind can be integrated with Active Directory to import your users, computers, groups, attributes and other important meta-data. The LDAP attributes can then be used to create user/computer accounts and filter BI Reports.

You can configure Active Directory from the **Settings** > **Active Directory** tab.

Check out the Settings > Active Directory section on the Teramind User Guide to learn how to setup an Active Directory / LDAP integration.

SMTP Email

Configuring the SMTP settings is necessary for the Teramind server to be able to send outbound emails such as the daily digest emails sent to administrators, scheduled reports, low storage notifications, license alerts, and password recovery emails.

You can configure the SMTP from the Settings > SMTP tab.

Check out this article for help: SMTP Configurations (On-Premise).

SSL Certificate

Teramind strongly recommends proper configuration of SSL in order to avoid browser warnings and restrictions. Some browsers will not allow WebSocket communications if the certificates are invalid. This may prevent you from watching live screens or screen recordings.

Configuring the SMTP settings is also necessary for the Teramind server to be able to send outbound emails such as the daily digest emails sent to administrators, scheduled reports, low storage notifications, license alerts, and password recovery emails.

You can upload your SSL certificate from the Settings > SSL tab.

Check out the Settings > SSL section on the Teramind User Guide for more information. You can also create your own SSL certificates for use with your on-premise deployments.

To learn how to generate such self-signed certificates, check out this article.

To learn how to use a third-party certificate, check out this article.

OCR Deployment

OCR (Optical Character Recognition) allows you to detect text inside images or videos. You will need to set up OCR nodes for OCR features such as OCR Search and OCR Rules to work.

To set up OCR you will need one *Session Mining* node and at least one *Session Mining Database* node (for every 200 users). These nodes will communicate with the master node and with each other.

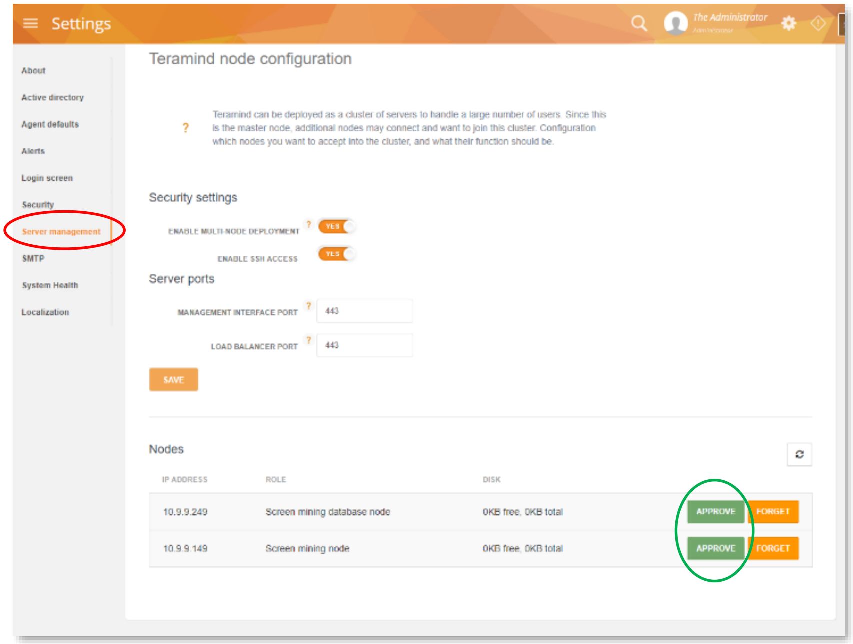
Please make sure the following ports are enabled and open among all nodes (*Master*, *Session Mining* and *Session Mining Database*): `443`, `5432`, `9200`, `42001` and `50051`.

Define the Machine's Role

You can change the machine's role in Step 2-3. Instead of entering `master`, enter `teracv` for creating a *Session Mining* node and `elastic` for creating a *Session Mining Database* node.

Approving the Links

After setting the machine role and specifying the master node's IP address you will see the OCR node approval requests on the dashboard. Do the following to approve the nodes:



Teramind node configuration

Teramind can be deployed as a cluster of servers to handle a large number of users. Since this is the master node, additional nodes may connect and want to join this cluster. Configuration which nodes you want to accept into the cluster, and what their function should be.

Security settings

ENABLE MULTI-NODE DEPLOYMENT: YES

ENABLE SSH ACCESS: YES

Server ports

MANAGEMENT INTERFACE PORT: 443

LOAD BALANCER PORT: 443

Nodes

IP ADDRESS	ROLE	DISK
10.9.9.249	Screen mining database node	0KB free, 0KB total
10.9.9.149	Screen mining node	0KB free, 0KB total

Click **Server management** on the *Settings* screen.

Locate the node requests under the *Nodes* section near the bottom.

Click the **APPROVE** buttons for the nodes.

Multi-Node Deployment

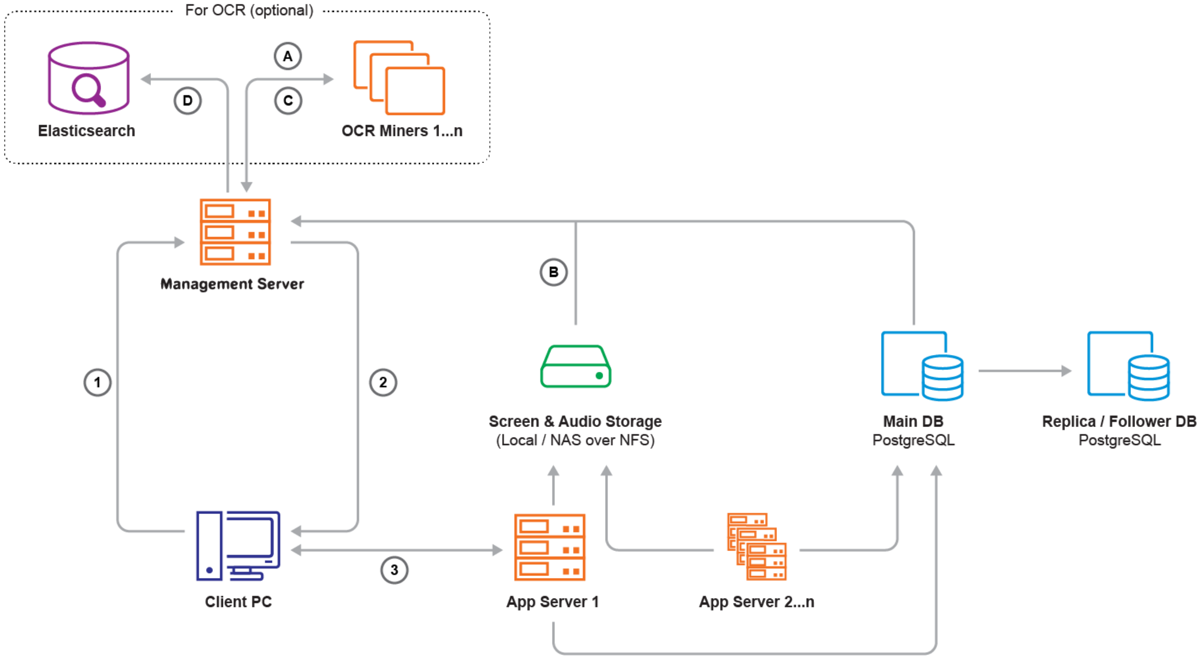
Check out this Knowledge Base article for instructions on multi-node deployments: How to set up an on-premise multi-node deployment.

What's Next?

Here are some resources to help you get started with post-deployment activities:

- User Guide - to learn how to use the Dashboard. Especially the Settings section for additional settings and configurations you can make.
- Rules Guide - to learn how to use the Behavior Policies & Rules features.
- This article - to learn how to configure Teramind for privacy.

Architecture



Legends:

1. Teramind Agent asks Management Server (Master Node) for an Application Server IP and port
2. Management Server (Master Node) responds
3. Teramind Agent connects to the assigned Application Server

A. OCR Miner talks to the Management Server (Master Node) and asks for a record to process

B. Management Server (Master Node) fetches a screen file from the Screen & Audio Storage and sends it to the OCR Miner Node

C. Once OCR is done, the OCR Miner sends results as text to the Management Server (Master Node)

D. Management Server (Master Node) writes the OCR result text to Elasticsearch

The **Management Server** (Master Node) serves the admin dashboard, load balances agents, and provides data to the OCR Miner Nodes. Teramind Agent connects to an **Application Server** via an always-on, TLS-encrypted connection, using our own protocol based on Google Protocol Buffers. **OCR Miners** are stateless and work with spot instances.

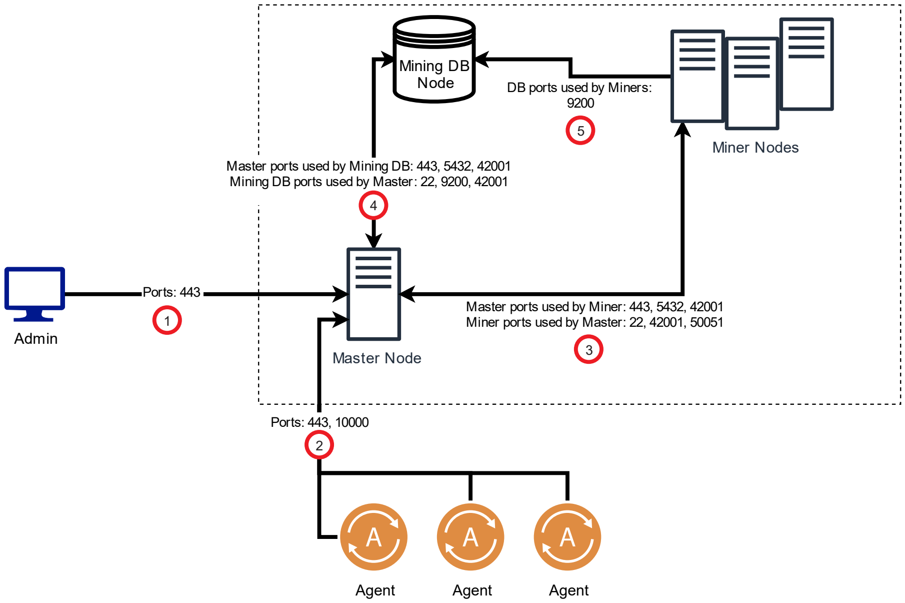
Installation Support and Troubleshooting

Chat	From your Teramind Dashboard or our website: https://teramind.co/
Email	support@teramind.co

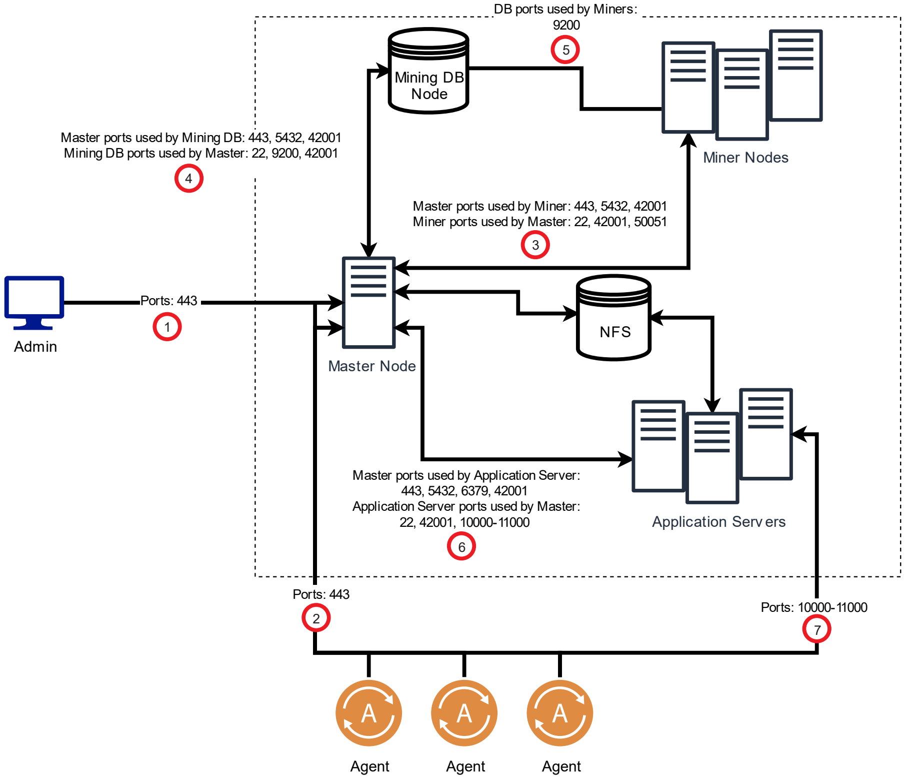
Data Sheet

Deployment Options

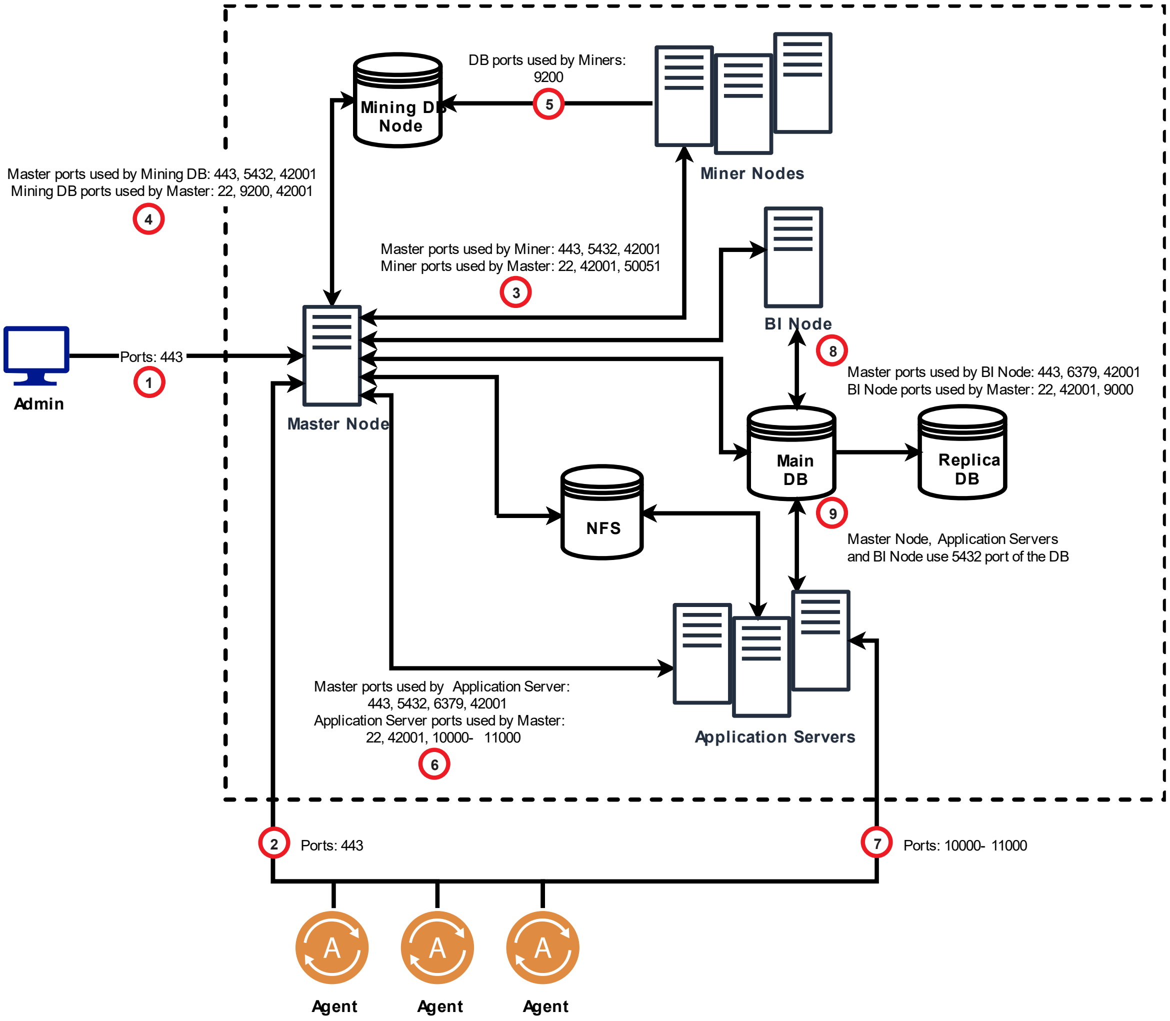
Option 1: Deployment without Application Servers


Mining DB Node
DB ports used by Miners:
9200
5
Miner Nodes
Master ports used by Mining DB: 443, 5432, 42001
Mining DB ports used by Master: 22, 9200, 42001
4
Ports: 443
1
Admin
Master Node
Master ports used by Miner: 443, 5432, 42001
Miner ports used by Master: 22, 42001, 50051
3
Ports: 443, 10000
2
A
A
A
Agent
Agent
Agent

Option 2: Deployment with Application Servers


DB ports used by Miners:
9200
5
Mining DB Node
Miner Nodes
Master ports used by Mining DB: 443, 5432, 42001
Mining DB ports used by Master: 22, 9200, 42001
4
Master ports used by Miner: 443, 5432, 42001
Miner ports used by Master: 22, 42001, 50051
3
Ports: 443
1
Admin
NFS
Master Node
Master ports used by Application Server:
443, 5432, 6379, 42001
Application Server ports used by Master:
22, 42001, 10000-11000
6
Application Servers
Ports: 443
2
Ports: 10000-11000
7
A
A
A
Agent
Agent
Agent

Option 3: Deployment with Separate Applications, Database and BI Servers


DB ports used by Miners:
9200
5
Mining DB
Node
Miner Nodes
Master ports used by Mining DB: 443, 5432, 42001
Mining DB ports used by Master: 22, 9200, 42001
4
Master ports used by Miner: 443, 5432, 42001
Miner ports used by Master: 22, 42001, 50051
3
BI Node
8
Master ports used by BI Node: 443, 6379, 42001
BI Node ports used by Master: 22, 42001, 9000
Ports: 443
1
Admin
Master Node
Main
DB
Replica
DB
NFS
9
Master Node, Application Servers
and BI Node use 5432 port of the DB
Master ports used by Application Server:
443, 5432, 6379, 42001
Application Server ports used by Master:
22, 42001, 10000- 11000
6
Application Servers
2
Ports: 443
7
Ports: 10000- 11000
Agent
Agent
Agent

Communications Protocol & Cypher

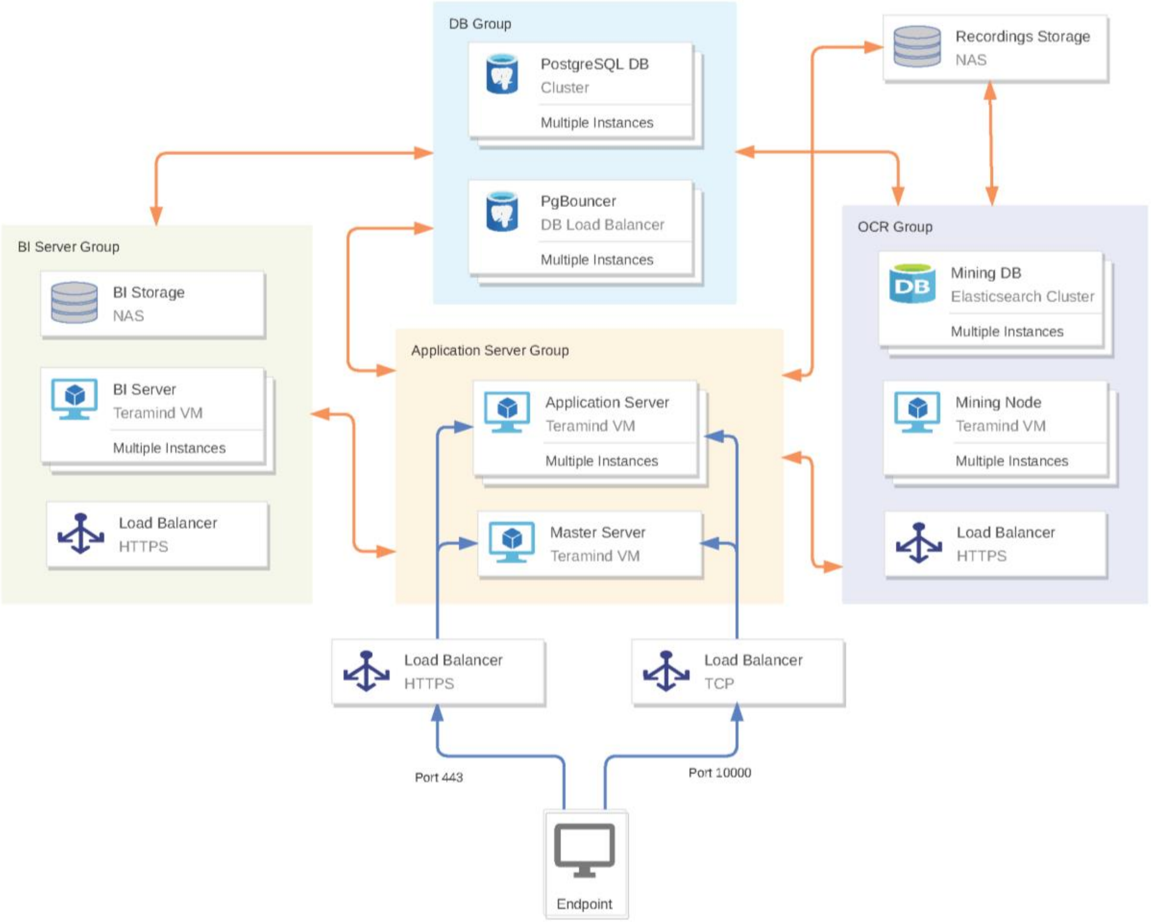
1	The web interface uses HTTPS over port 443 by default. The port can be changed in settings if needed. **TLSv1.2 Ciphers:** TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 (secp384r1) TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 (secp384r1) TLS_DHE_RSA_WITH_AES_256_GCM_SHA384 (dh 2048) TLS_DHE_RSA_WITH_AES_128_GCM_SHA256 (dh 2048)
2	Agents connect to the Master Node over HTTPS (443 by default). Same encryption settings as in #1. Also, agents connect using a proprietary protocol on port 10000 (if no Application Servers are deployed). Encryption information for port 10000: **TLSv1.2 Ciphers:** TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 (secp384r1) TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 (secp384r1) TLS_RSA_WITH_AES_128_CBC_SHA (RSA 2048) TLS_RSA_WITH_AES_128_CBC_SHA256 (RSA 2048) TLS_RSA_WITH_AES_128_GCM_SHA256 (RSA 2048) TLS_RSA_WITH_AES_256_CBC_SHA (RSA 2048) TLS_RSA_WITH_AES_256_CBC_SHA256 (RSA 2048) TLS_RSA_WITH_AES_256_GCM_SHA384 (RSA 2048) Optionally can be reduced to ECDHE ciphers only
3	Master communicates with Miner nodes over multiple ports with different encryption settings. All communication between nodes should happen over a private secure network. Only the Master (and Application Server nodes if any) should be exposed to the public. **Ports Used for Miners:** - 22, SSH, optional - used to update child nodes through master - 443, HTTPS, same ciphers as in #1 - 5432, PostgreSQL, supports connections without encryption - 42001, proprietary protocol, no encryption, node lifecycle events are broadcasted through this port - 50051, HTTPS (Google grpc)
4	Same ports as in #3, with the addition of Elasticsearch on port 9200 (HTTPS)
5	Miners communicate with the Mining DB Node only over 9200 port (Elasticsearch, HTTPS), and access control is IP-based, i.e., Mining DB Node servers request only from the Master Node or Miner Nodes
6	Application servers communicate with the Master Node using the following ports: **Ports Used for Application Servers:** - 22, SSH, optional - used to update child nodes through master - 443, HTTPS, same ciphers as in #1 - 5432, PostgreSQL, supports connections without encryption - 6379, Redis, no encryption - 10000 - 11000, HTTPS (web sockets), each application server process acts as a web socket server on an odd port in the 10000-11000 range, this web socket connection is used when streaming live screen video/audio - 42001, proprietary protocol, no encryption, node lifecycle events are broadcasted through this port
7	Application servers receive agent connection on even ports in the range 10000 - 11000, same encryption settings as in #2 for port 10000

Connection Notes

Agent ←→ Server Connection	Master ←→ Child Node Connection
• In general, agents push data to the server, it never initiates a connection to the agent. • Agents connect to the Master Node on port 443 by default over TLS and receive the IP address of a server where it connects using a proprietary protocol on port 10000. • When connected over port 10000, the agent sends the username, computer information, etc. and the server identifies the agent. • If live audio monitoring is enabled, the server opens a random UDP port (1024 - 65535) and generates a key for audio data encryption, sends port and key to the agent. After these configuration steps are completed, the agent communicates with the server via an established TLS channel and sends audio frames encrypted with Blowfish cipher over the UDP port.	• It is expected that communication happens over a private secure network. • There is a very basic level of security applied to the communication between nodes. • Nodes serve requests only from other approved nodes identified by IP address.

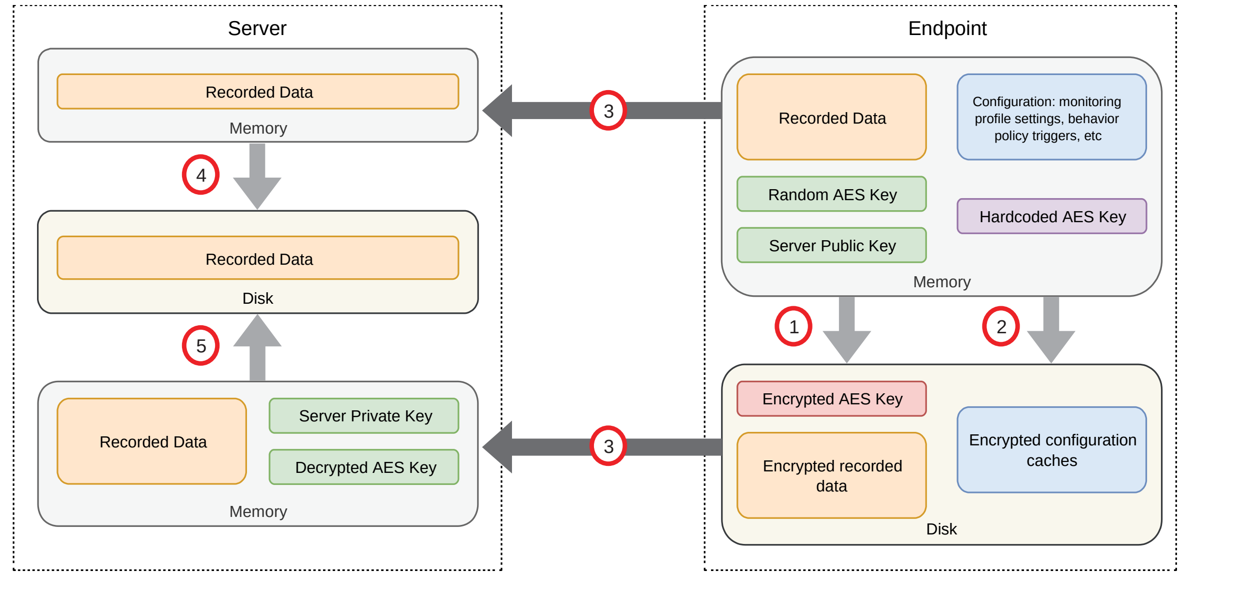
High Availability

Native, built-in high availability can be fine-tuned and adapted for different scenarios



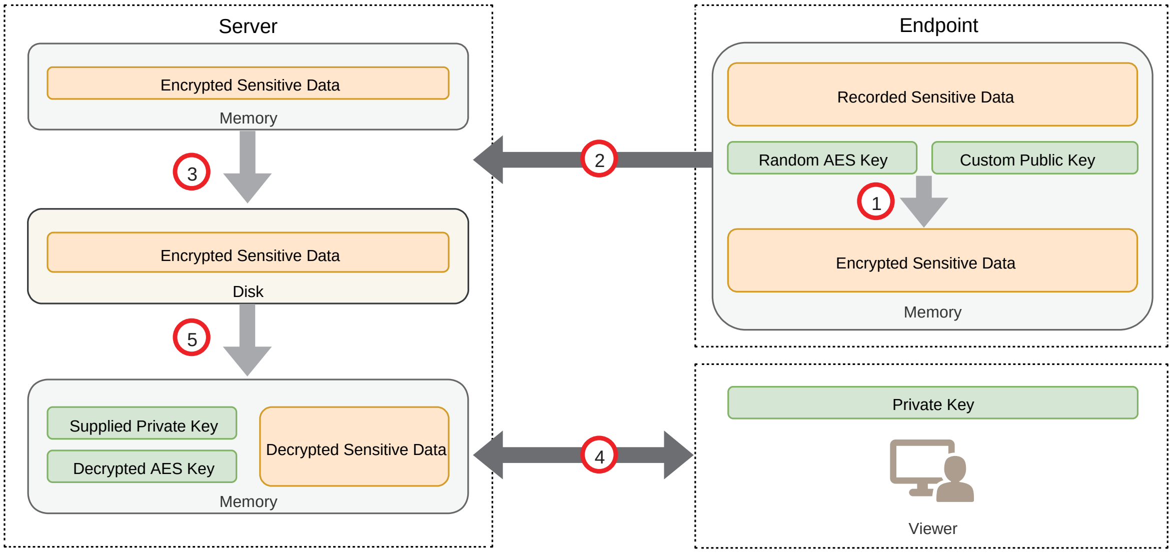
Please check out the **Teramind HA Data Sheet** for more information

Default Encryption



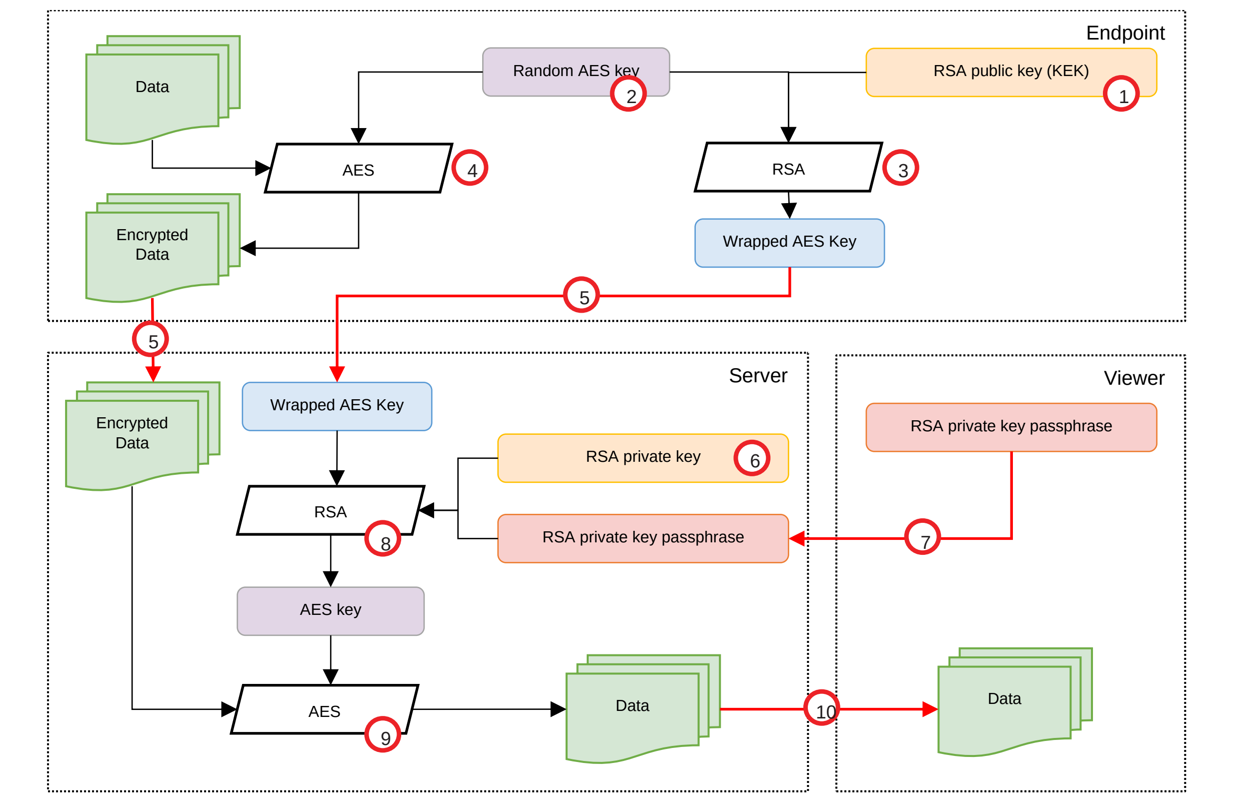
1	Recorded user behavior data can be stored on the endpoint in some circumstances (for example when the agent is offline). For this type of data envelope encryption (RSA+AES) is used (with the server public key used as the encryption key). Agent generates random AES key material and keeps it unencrypted in memory only. When encrypted data is written to disk, the AES key is encrypted with the server's public key and written alongside the data.
2	Configuration caches don't contain any sensitive information and are being read by the client itself. Basic symmetric encryption with a hardcoded key is used to discourage tampering/reverse engineering.
3	Data is transmitted to the server using a secure TLS channel. Certificate pinning of both parties can be enabled.
4	Unencrypted data transmitted by the agent is processed by the server and written to disk. Data at rest is not encrypted on the server side. It is expected that some disk-level encryption solutions will be used on the hypervisor level.
5	Encrypted data with an encrypted key is transmitted to the server using a secure TLS channel. The server decrypts the AES data encryption key with its private key. Encrypted data is decrypted using AES.

End-to-End Encryption: Overview



1	There is an option to use full end-to-end encryption for sensitive data such as emails, keystrokes and screen recordings. In this case, the same envelope encryption method is used, but the server does not have a private key to decrypt data. The AES encryption key is generated by the agent process and encrypted with a configured RSA public key.
2	Encrypted sensitive data and encrypted AES encryption key are sent to the server.
3	The server writes encrypted data alongside the encrypted data encryption key to the disk.
4	The viewer of encrypted data provides the private key for decryption.
5	The server reads encrypted data and encrypted encryption key from the disk. The server decodes the data encryption key using the provided private key. The decrypted key is stored in memory only. The server decrypts data using the decrypted key and sends it to the viewer. Afterward, the decrypted key and data are trashed in server memory.

End-to-End Encryption: Data Flow



1	The agent reads the RSA public key used for the Key Encryption Key (KEK) from a specific location on the disk. There is no limitation on the number of KEKs used in the system. It can be per-endpoint KEK, per-department KEK, or any other method *(Possibility to integrate with third-party KMS solutions).*
2	The agent generates a random AES key used for data encryption (Data Encryption Key – DEK).
3	AES data encryption key (DEK) is encrypted (wrapped) using RSA encryption key (KEK).
4	Data is encrypted with an AES key (DEK).
5	Encrypted data and wrapped DEK are transferred to the server. Since the DEK is encrypted (wrapped), the server cannot decrypt the data.
6	The private part of the KEK is protected with a passphrase (encrypted) and stored on the server. *(Possibility to integrate with third-party KMS solutions).*
7	When the viewer attempts to view the data, they should supply a passphrase of the corresponding KEK private part.
8	When the passphrase is provided, the server decrypts the wrapped DEK using the KEK private part and supplied passphrase.
9	After the DEK is unwrapped (decrypted), data can be decrypted.
10	Decrypted data is sent to the viewer,

End-to-End Encryption: Key Management

- There is no automated key management now.
- Keys should be distributed to the endpoints and put into specific locations.
- Server configuration is performed through the database directly, no web interface is available.
- Integration with third-party key management solutions is possible in the future.

1

- The agent reads the KEK data from `C:\ProgramData\{4CEC2908-5CE4-48F0-A717-8FC833D8017A}\certs\kek.pem`.
- The file should contain the RSA2048 public key in PEM format, without a passphrase.

2

- KEK public/private parts should be stored as PEM files (RSA public/private key) under `/usr/local/teramind/conf` path.
- The private key should be encrypted with a passphrase.
- After that KEKs should be registered in the DB in the `encryption_kek` table.
- There should be only one record for each KEK.
- Example of SQL to register KEK:

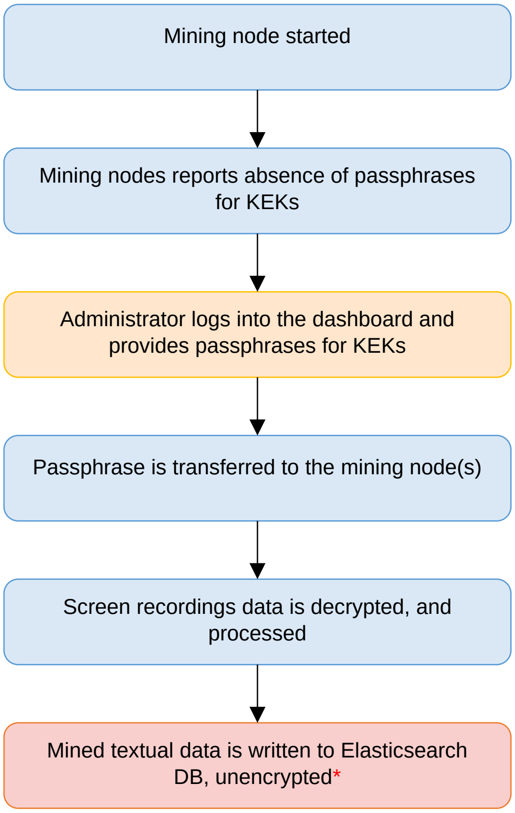
```
insert into encryption_kek(pub_datafile, priv_datafile,
priv_encrypted) values (
‘/usr/local/teramind/conf/keks/kek1_pub.pem’,
‘/usr/local/teramind/conf/keks/kek1_priv.pem’,
‘t’
);
```

- A server restart is required after configuration changes.

NOTE: In multi-node deployments, PEM files should be distributed across all nodes.

End-to-End Encryption: OCR

Currently, OCR functionality is not supported if end-to-end encryption is used. However, support might be added using the following procedure:



Mining node started

Mining nodes reports absence of passphrases for KEKs

Administrator logs into the dashboard and provides passphrases for KEKs

Passphrase is transferred to the mining node(s)

Screen recordings data is decrypted, and processed

Mined textual data is written to Elasticsearch DB, unencrypted*

**Support for storing and searching encrypted textual data is on our roadmap and will be available soon.*